FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

A Reuben H. Donnelley Publication

MARCH • 1960

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Photo by Tom Lynch

Wall collapsing during Clifton-Passaic factory fire. Startled fire fighters were about to place ladder pipe in operation

Fire Protection at Cape Canaveral

Los Angeles County Fights Fire with Logistics

Steel Cord Tires Boost Load Ratings

** if your men aren't wearing Bullard helmets... head protection is costing you too much!*

MORE FIRES FOR YOUR MONEY!

Expose rugged Bullard HARDBOILED fire helmets to searing flame (high as 2,000° F.), freeze them, soak them in boiling water... these grueling punishments won't soften or weaken a Bullard fire helmet's protective characteristics! This is the only fire hat that exceeds Federal specifications. No Fire Helmet is tougher, yet few are as comfortable to wear. Light and cool on your head... made from non-conductive fiber glass they weigh only 20 ounces. In a choice of permanent non-fading colors, these helmets are equipped with replaceable suspensions that adjust to all standard head sizes. Today, ask to see how Bullard Fire Helmets make your budget go further... help you fight more fires for the money!

Stop First Aid Water Damage

New Bullard Fire Department First Aid Kits are 100% water proof. Every supply is separately sealed in Polyethylene wrappers. Includes new approved, spray on, pain killing *After Burn Treatment*.

New Emergency Burn Treatment

No matter how severe the burn Bullard *After Burn Treatment* instantly soothes pain-reducing shock. Helps prevent infection and promotes healing. ABT is both non-toxic and non-irritating. In 3, 5, and 11 oz. spray containers.

BULLARD
INDUSTRIAL SAFETY EQUIPMENT

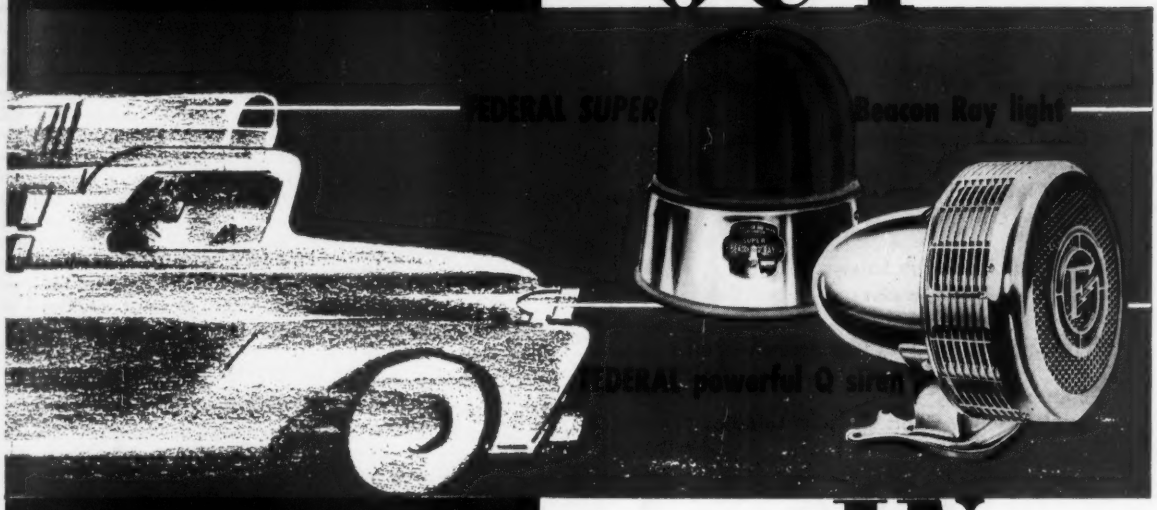
E. D. BULLARD COMPANY SAUSALITO, CALIFORNIA

See your local fire equipment dealer or write for catalog of complete line of fire helmet accessories.

AWAY OUT IN FRONT

That's where your apparatus will be,
in traffic — AWAY OUT IN FRONT.
You'll be getting there faster,
with greater safety,
if you're equipped with a
SUPER Beacon Ray and a FEDERAL Coaster siren.

You'll be ahead because
the SUPER Beacon Ray is ***out in front***
of other warning lights;
just as the Model Q Siren is a ***standout***
among other sirens.



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Catalog 300, yours ***free*** for the asking,
describes FEDERAL sirens and warning lights
at every price for every purpose.
Write today.

Go **quickly-** ***Go*** **safely-** ***Go*** **FEDERAL**

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FIRE
ENGINEERING

VOL. 113 MARCH, 1960 NO. 3

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Firsthand News

In order to provide timely and authoritative information to the fire service, our editors travel much —frequently to considerable distance.

The article in this issue on fire protection at the Cape Canaveral missile test center is an example of this firsthand news reporting and the travel it often entails.

Recently, Major General A. M. Minton, USAF, director of civil engineering, informed us that he planned to inspect construction and base facilities at Cape Canaveral and at Eglin Air Force Base. He invited FIRE ENGINEERING to send a representative on the inspection trip, and our assistant editor was given the assignment.

The Air Force flew our representative to Canaveral where he viewed the missile test facilities and the fire protection provided. The fire chief of the missile center accompanied our editor on his tour of the center, answered his questions and provided additional information.

While 16 engineering magazines were invited to make the trip, it is significant that FIRE ENGINEERING was the only publication representing the fire service. Naturally, we are gratified at this recognition of FIRE ENGINEERING as "The Journal of the Fire Protection Profession." We aim to maintain this stature by continuing to supply the fire service with the latest and most authoritative information—firsthand.

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FIRE ENGINEERING is published the fifteenth of each month by Magazine Publishing Division, The Reuben H. Donnelley Corporation, 466 Lexington Avenue, New York 17, N. Y.

David L. Harrington, Chairman of the Board, Gaylord Donnelley, Vice Chairman of the Board; Curtiss E. Frank, President; Donald R. Arnold, Operating Vice President; Harold P. Harper, Hamilton B. Mitchell, Giles B. McCollum, Nobel Hall, Evert F. Nelson, Edward A. O'Rorke, Schuyler D. Haslett, James H. Evans, Lewis W. Reich, Vice Presidents; Fred C. Ash, Secretary-Treasurer and General Counsel; Karl G. Clement, Controller. Edward B. Wintersteen, Executive Manager, Magazine Publishing Division. Publication Office, 109 W. Chestnut St., Lancaster, Pa.

EASTERN REPRESENTATIVES: William J. Gibson; R. T. Cutler, 466 Lexington Avenue, New York 17. ORegon 9-4000.

CHICAGO: Donald C. White, 59 E. Van Buren Street. WAbash 2-7738.

LOS ANGELES: August Haurin, 6000 Miramonte Blvd. LUdlow 5-5525.

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Subscription Rates: U. S. and Canada, $3.50 a year; Pan-American and Foreign, $4.50; Single copy, 40¢. Change of address should reach us one month in advance. Printed in U.S.A. Second class postage paid at Lancaster, Pa.

MAIL CHANGES OF ADDRESS and subscription orders to Fire Engineering, 466 Lexington Avenue, New York 17, N. Y. Please include your city delivery zone number.

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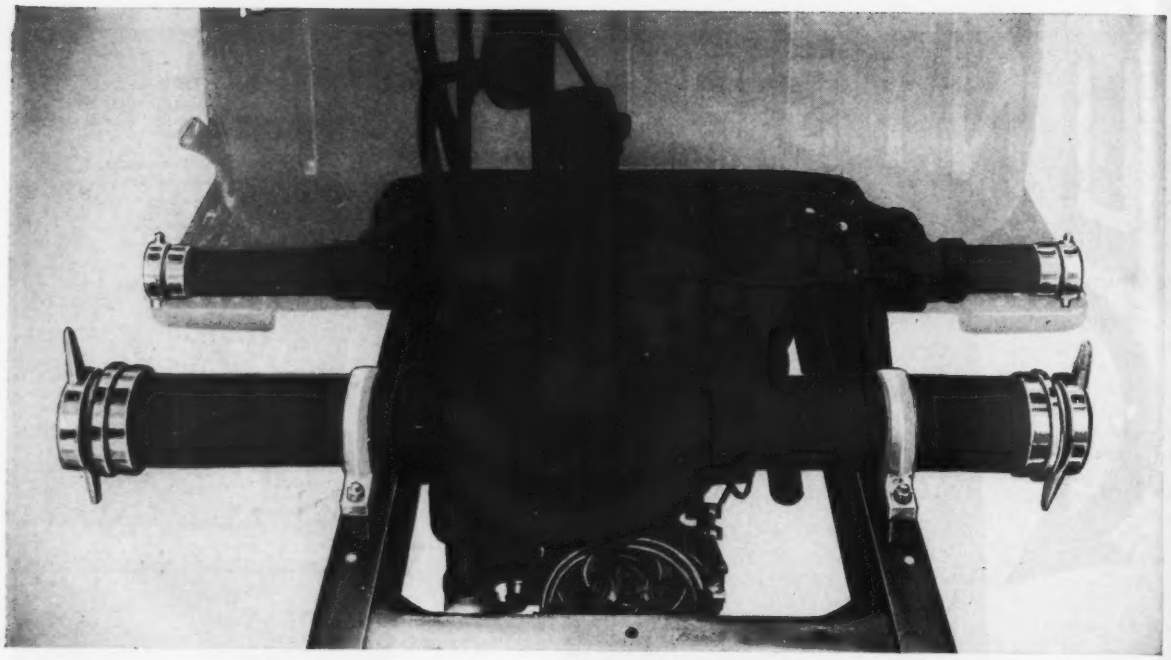
IN CANADA *Pierre Thibault* CANADA, LTD., LTEE., PIERREVILLE, QUEBEC

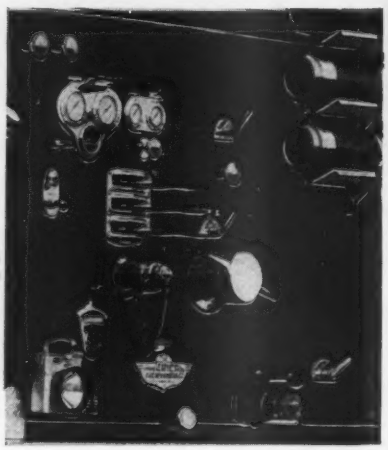


GET 3 BIG ADVANTAGES

WITH THE VERSATILE BARTON-AMERICAN DUPLEX-MULTISTAGE CENTRIFUGAL PUMP

You'll get faster control–and higher performance–with a Barton-American Type DMA Pump. These three outstanding design features explain why –and *only* the DMA has them all!

1. In *one* compact pump unit, you have a choice of three pressure and volume selections: High volume at normal pressures, normal high pressures, and extremely high pressures for fog guns. All operate at moderate engine speeds . . . and by merely shifting a *single* lever.
2. Two impellers, *independently* shafted and geared, will operate alone or together in series. Volume pump handles dirty water *without* damage to the high pressure pump.
3. This Barton-American Duplex multistage centrifugal pump has one-point lubrication similar to truck transmission housings. All bearings are bathed in oil inside . . . there's no need for water lubrication.



Typical pump panel. One lever gives you instant selection of *Capacity-Pressure-Series* operation—a Duplex Pump feature.

Yes, these unique, advanced features, plus automatic pressure-operated valves and other advantages provide you with *outstanding* fire-fighting power. For full details, write for . . .

BULLETIN 8733
DMA Duplex Multistage Centrifugal Midship Pumps

BULLETIN 8734
DMB Duplex Four-Stage Midship Pumps

AMERICAN FIRE PUMP COMPANY

AMERICAN FIRE PUMP COMPANY • P. O. BOX 219-A • 803 MAIN STREET ROAD • BATTLE CREEK, MICHIGAN

Good hose pays off when the pressure's on

B.F. Goodrich hose pays back the extra pennies it costs

ALL the money saved in a "just as good as" hose—and much more—can go up in smoke in the extra seconds it takes to get heavy, bulky hose into action, replace a blown out section or put on more hose for longer lines. The quality features in B.F.Goodrich hose that prevent these delays add only a few cents per foot to its costs, but are worth much more to you when the pressure's on.

For example, B.F.Goodrich hose is as strong as heavier hose, but much lighter and more flexible. That's because of the "filler" cords of Dacron fiber which go around the hose and carry the load under pressure. Dacron cords are thinner, and three times stronger than cords used in ordinary hose. The hose not only lasts longer, but is easier to handle, and coils tighter—so that hundreds of extra feet can be racked on a truck.

Not one length of this hose has ever failed at the coupling. That's because of its Plylock end protection, an extra layer of hard woven cords extending 12" from the coupling, which adds 100% more strength to the coupling area.

Superseal is a special treatment that practically eliminates mildew as a hose killer. This exclusive B.F.Goodrich treatment for hose gives 10 times more resistance to mildew and rotting than ordinary treatment.

If you're looking for a good buy in hose, get the B.F.Goodrich fire hose with all these quality features. It may cost more to begin with, but will actually cost you less in the long run. Your B. F. Goodrich distributor can tell you more about it. *B.F.Goodrich Industrial Products Company, Dept. M-810, Akron 18, Ohio.*

B.F.Goodrich

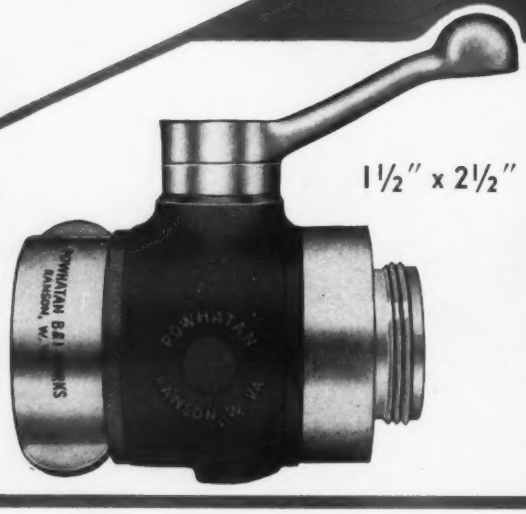
POWHATAN
"Speeds Up"
FIRE ATTACK
with
"BALL TYPE" VALVE & SIAMESE

The

"BALL TYPE" VALVE

Quarter turn insures full flow, through straight waterway, under any pressure. Rugged for hard fire service.

1½" x 2½"



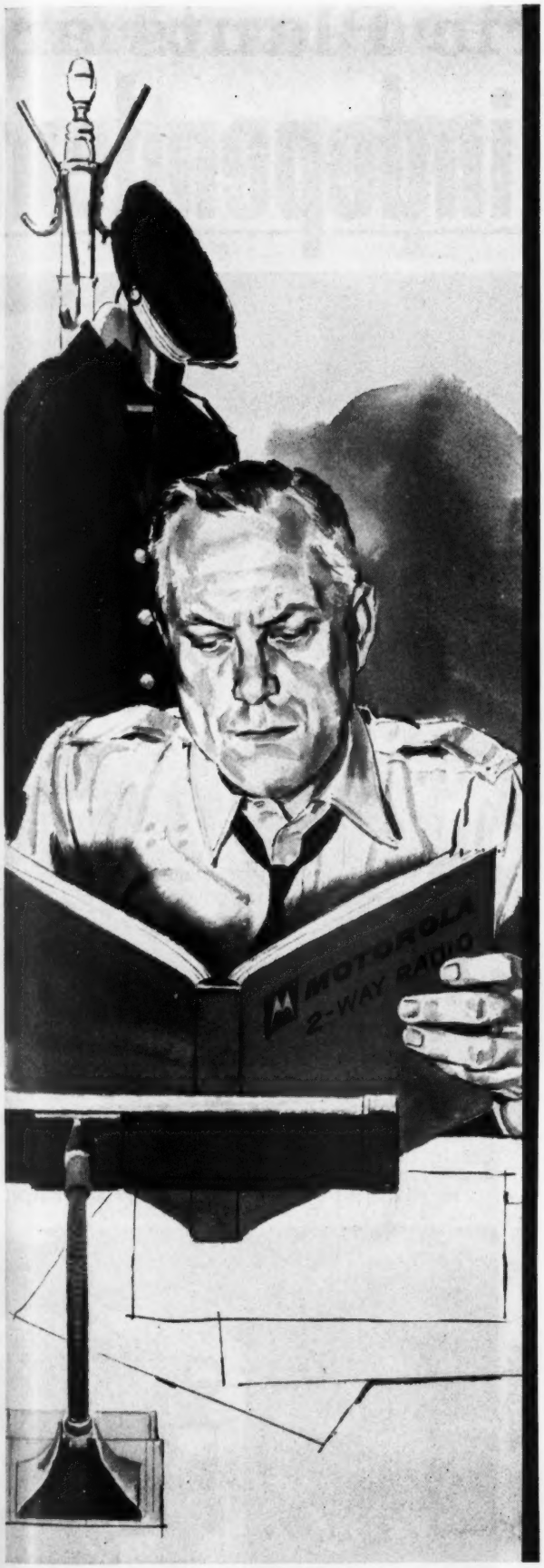
2½" x 1½" x 1½"

The

"BALL TYPE" SIAMESE

Both types come with either Pin Lug or "Sensible Lug" Swivel. Body painted red—polished bronze or chromium plated trim.

POWHATAN
BRASS & IRON WORKS
RANSON, WEST VIRGINIA
In The Same Location Since 1892



The Town's Most Careful Buyer

is working late again tonight!

As a purchaser of equipment on which *lives* may depend, you naturally spend a lot of time *comparing* before you specify. So, when it comes to equipment as intricate as 2-way radio, you've got a real job on your hands.

That's why Motorola has a Factory Sales Engineer nearby. He's there to help you plan a system that's custom-tailored to your needs. He can do this job best—because he can plan from the largest selection of equipment available anywhere. And he's backed by an army of electronic specialists—from engineering through production to factory supervised service stations.

What about performance on the job? That's your most important consideration. And that's where Motorola has built its reputation—*on the job*. When the chips are down—when men *must* rely on their equipment—Motorola has proved itself so often it's the choice of 3 out of 4 radio-equipped police and fire departments.

Do you have all the facts on the new Motorola radio units ready now for your new installation, or to bring your present system right up-to-the-minute in efficiency and economy. Call or write for the latest information today.

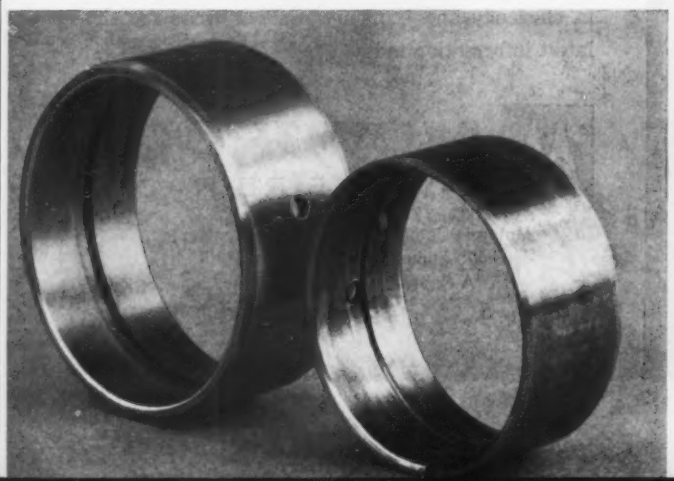
MOTOROLA
2-WAY FIRE RADIO

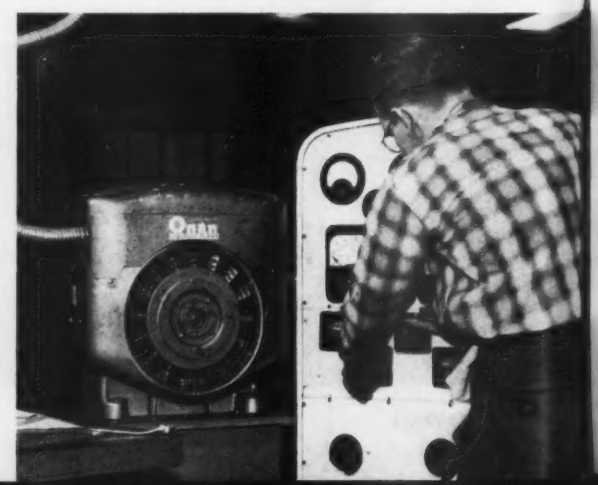
Motorola Communications & Electronics, Inc.
4501 Augusta Blvd., Chicago 51, Ill.
A Subsidiary of Motorola, Inc.

Onan Electric Plants are
when this independent

Big, beefy bearings for longer life. (Lower left) double-size Onan bearings vs. small bearings (right) used in many other makes. Larger bearing surface reduces wear, stretches time between overhauls. Onan builds up to performance—never down-to-a-price.

The engine that ran equivalent to 487,888 automobile miles. Here's endurance no auto could begin to match. Onan engine #1068 was operated for 12,197 hours. It was stop-started 100 times. At test's end #1068 and generator were delivering their stated output.





Performance Certified only tester says O.K.

His job is to provide a double-check on Onan's own tests and testing methods

The man at the left is an expert from an independent testing laboratory. On the job, he believes nothing except what his trained eyes, ears and scientific testing instruments tell him.

He, and others like him, pay frequent surprise visits to Onan factories. He can pull any Onan plant off the test line. Put it through its paces. Recheck the checks Onan engineers and inspectors have already made. He has authority to pull a whole series of plants off the line if he finds one fault. He does all this even though every Onan plant is tested for hours by Onan personnel *before it is shipped.*

Onan takes these special precautions to make *doubly* sure that you get all that you pay for, and more, when you own a Performance Certified Onan. For more details—and an analysis of your primary and stand-by power needs—see the Onan distributor nearest you. He's listed in the telephone classified section in all major cities. Or write direct.

ONLY ONAN GIVES YOU THIS GUARANTEE

PERFORMANCE CERTIFIED
We guarantee that when properly installed and operated this Onan electric plant will deliver the full power and the voltage and frequency regulation promised by its nameplate and published specifications. This plant has undergone several hours of running-in and testing under realistic load conditions, in accordance with procedures certified by an independent testing laboratory.
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Stays Dry*... No Hose Towers, Mechanical Dryers, Humidity Machines or Excessive Spares Required. *Mildew-Resistant

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COMPARE the weight and coil compactness of "Red-Flex" with heavier, bulkier old-fashioned hose. No wonder it's being specified by more and more Fire Departments, everywhere!

STANDARD SIZES 400 LB. TEST

Hose Size	Wgt., 50', Uncoupl'd	50' Coil Diameter
1½"	20 lbs.	19"
2"	29½ lbs.	21"
2½"	37 lbs.	21"

Goodall Rubber Company Date_____
448 Whitehead Rd., Trenton 4, N. J.
Gentlemen:
☐ Send complete information on "RED-FLEX" Fire Hose
☐ Have representative call with details and prices.
Company_____
Address_____
City_____Zone____State_____
Attention of_____

Standard of Quality—Since 1870

HOSE · BELTING · FOOTWEAR · CLOTHING AND OTHER INDUSTRIAL RUBBER PRODUCTS

GOODALL *Rubber Company*

GENERAL OFFICES, MILLS and EXPORT DIVISION, TRENTON, N. J.

BRANCHES AND DISTRIBUTORS THROUGHOUT THE UNITED STATES. IN CANADA: GOODALL RUBBER CO OF CANADA LTD., TORONTO.

Latest addition to the Waltham, Massachusetts, fleet of Mack fire apparatus are these two recently-delivered 1000-gpm triple-combination pumpers. One features a 300-gallon booster tank, extension and roof ladders, and complete foam equipment, in addition to provision for 2000 feet of hose. The second unit features a 200-gallon booster tank, extension ladder and a 1500-gpm deck gun. All six earlier Mack apparatus are still in active service, including the first unit, delivered in 1939.

For over 20 years

Waltham has relied on Macks for dependable fire protection

Since 1939, when it first purchased Mack apparatus, the City of Waltham Fire Department time and again has placed its reliance on Mack apparatus.

Latest in its choice of Mack apparatus are two Model B-95 1000-gpm triple-combination pumpers. These units bring to eight the number of Mack units Waltham has put in service in the last 20 years.

Waltham has good reason to rely on Mack apparatus. Rapidly growing, the community also protects many manufacturing plants within its corporate limits, and needs the most effective fire-fighting equipment it can get.

There's a Mack apparatus for your every fire-fighting requirement—cab-forward or conventional . . . choice of engines headed by the famed Mack Thermodyne® 707C . . . standard or automatic transmission . . . single rear axle or rear 4-wheel Mack Balanced Bogie . . . air or hydraulic brakes . . . and the gear ratios and equipment you need.

Ask your Mack representative to show you how Mack apparatus has earned its reputation as the finest in the field. Mack Fire Apparatus, Allentown, Pennsylvania. Mack Trucks of Canada, Ltd., Toronto, Ontario.

7486

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FIRST NAME FOR

FIRE APPARATUS

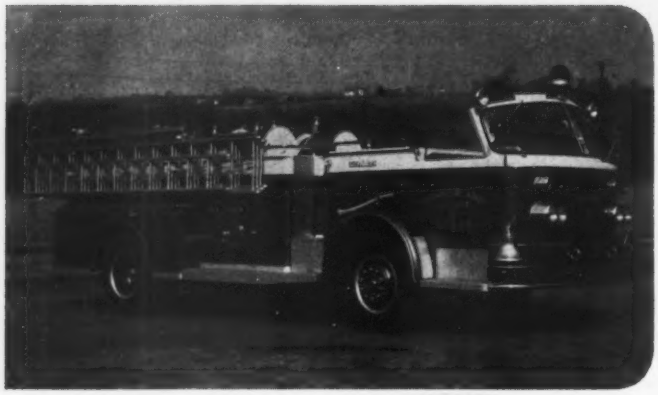
COMPLETE LINE OF PUMPERS—500 to 1250 GPM . . . SQUAD AND HOSE WAGONS . . . AERIALS 65' to 144' . . . COMBINATION LADDER TRUCKS

Original Manufacturer of Aluminum Ladders

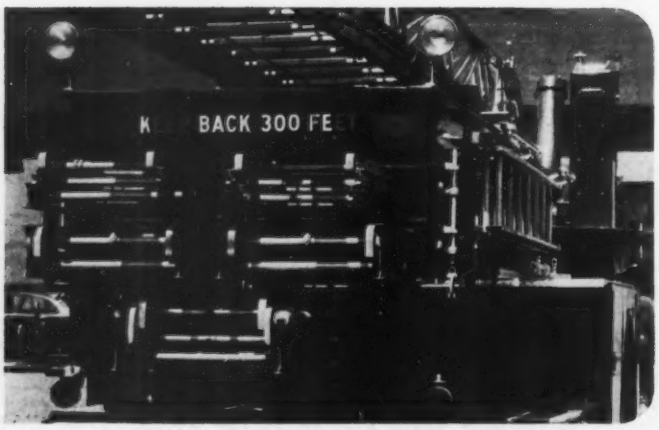
ALCO-LITE

aluminum ladders are standard equipment on these trucks

An Alco-Lite 14′ Pumper Roof Ladder and 24′ Pumper Extension Ladder on a 900 Series American LaFrance Pumper.



An Alco-Lite 14′ Pumper Roof Ladder and 35′ Pumper Extension Ladder on a 900 Series American LaFrance Pumper.

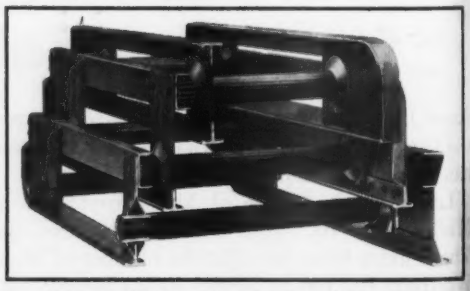


This typical nesting of Alco-Lite Ladders on American LaFrance Aerials includes a 24′ Pumper Extension Ladder, 20′ Straight Ladder; 35′ Heavy Duty Extension Ladder, 28′ Pumper Extension Ladder; 16′ Pumper Roof Ladder, 35′ Heavy Duty Extension Ladder, and 50′ Heavy Duty 3 Section Extension Ladder.

Alco-Lite Aluminum Ground Ladders are lighter weight . . . easier-to-handle . . . safe. Exclusive gusset plate, expansion bushing construction makes possible the open side rail,T-channel design. Excess weight adding bulk in the side rails is eliminated. More than meet all current tests for strength and safety.

Alco-Lite Aluminum Ladders are unaffected by moisture, water, fumes, gases. Won't warp, rust, rot, splinter, or burn. Almost maintenance free!

Rungs won't twist, turn, or break off. Feature non-slip type corrugations.

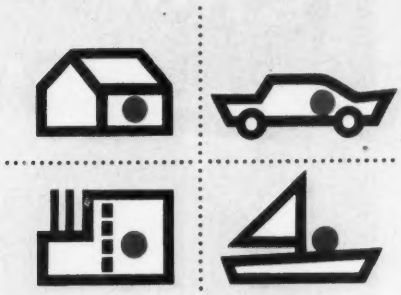


Channel slides prevent sections from disengaging. On large ladders, automatic spring loaded locks allow sections to extend, lock, and unlock simultaneously.

Aluminum Ladder Company ALCO-LITE

FLORENCE S. CAROLINA

To fight fire faster, Ansul has introduced a dramatic new concept in fire extinguisher design—the unique MONITOR dry chemical unit. Created to fill a basic need for low cost, effective first-aid fire protection, MONITOR packs the fire-killing power of 8 ordinary carbon tet units or a 1½ gallon foam extinguisher. Exclusive features include a disposable recharge shell . . . U.L. Listed recharge unit . . . space-saving spherical shape . . . simple operation. MONITOR comes in red or white for maximum visibility in any location. Your Ansul man has complete details on this dramatically different first-aid fire extinguisher. ANSUL CHEMICAL COMPANY, MARINETTE, WIS.



new products, new ideas for better fire protection

ANSUL

FIRE FIGHTING EQUIPMENT
REFRIGERATION PRODUCTS
INDUSTRIAL CHEMICALS

MIDWESTERN

Safety Clothing for Firemen

The Original STRIPED SAFETY COAT

The striped safety coat for firemen is an Original Midwestern development — first in the field — a leader ever since its introduction 19 years ago.

The BRILLIANT YELLOW stripes are actually rubberized into the black rubber . . . an exclusive feature that defies comparison with substitute or imitation models where the stripes are glued, sewed or painted on the material.

When working under hazardous conditions in smoke, fog, dust or darkness, firemen deserve the superior quality, design, comfort and safety features offered by the Original Midwestern Safety Coat.

Many Fire Chiefs who insist on the best of protection for the men of their department specify MIDWESTERN SAFETY garments to the last man because every outstanding Midwestern feature is original. All fabrics are extremely soft and flexible and have the qualities to stay that way at varying temperatures. You can always distinguish a MIDWESTERN SAFETY garment by the soft feeling of the material in both rubber and fabric type garments.

We have always designed and constructed our garments with the one thought . . . that every fireman deserves complete protection in his hazardous work of protecting life and property against the ravages of fire.

COMBINATION BUNKER SUITS

The many weights of both rubber coated and cloth type materials offered in our MIDWESTERN Quick-Hitch suit makes this combination ideal for all sections of the domestic market and export. Also, both coat and bunker pants may be purchased with or without detachable wool linings.

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Mackinaw, Illinois

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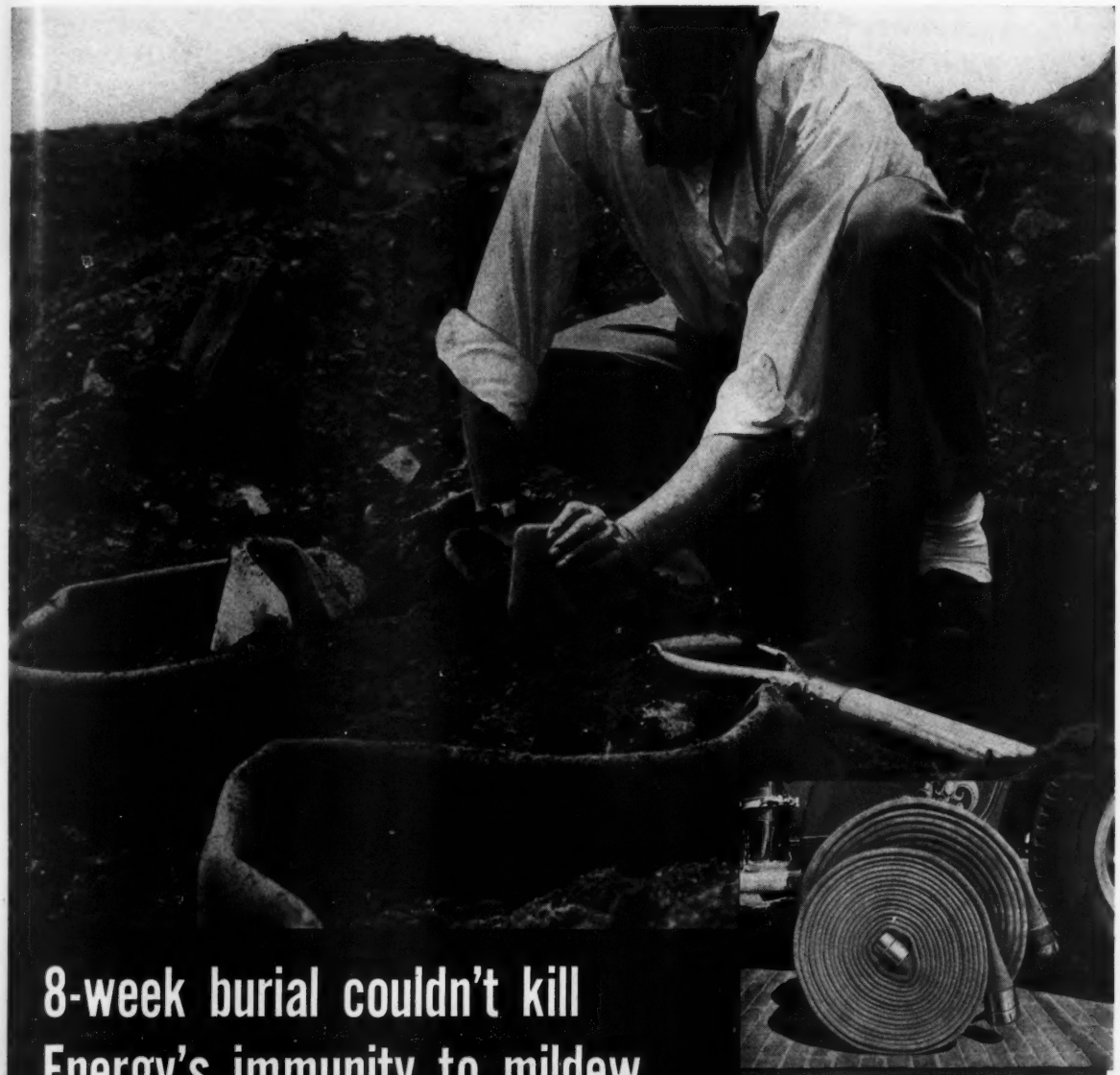
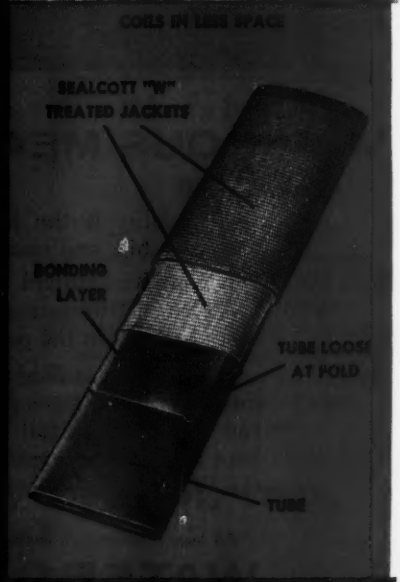
Manufacturers of the Famous MACKINAW Safety Coat



8-week burial couldn't kill Energy's immunity to mildew

Hamilton's Energy fire hose, impregnated with Sealcott "W" inhibitor, emerged from its damp grave as free from mildew as the day it was buried 8 weeks earlier. Sealcott "W" penetrates and seals the cords in both jackets from mildew and moisture, prevents freezing in action. Energy's exceptional flexibility and tube adhesion are not affected.

20% lighter than conventional types, Energy 600-lb. test hose uses Dacron filler cords in both jackets to increase strength and flexibility while reducing bulk and weight. Smooth nonporous tube, which is free at points of fold, allows greater flexibility, is non-acid forming, slow-aging and oxygen bomb tested. Write Dept. F-102 for details.



Serving Industry since 1870

Hamilton Rubber

MANUFACTURING CORPORATION, TRENTON 3, N. J.

A Division of Acme-Hamilton Manufacturing Corporation

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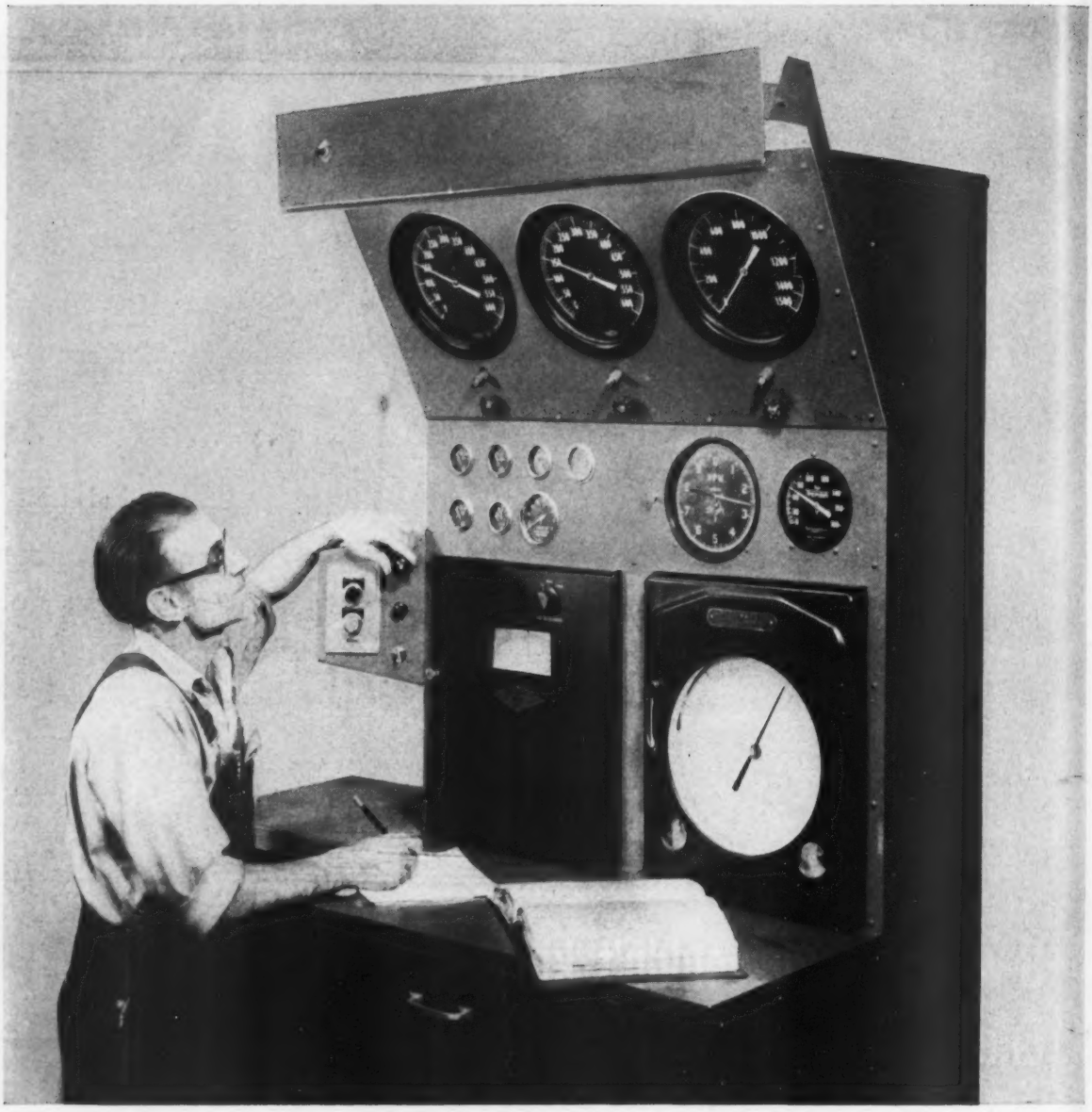


WATEROUS MEANS UNCOMPROMISING QUALITY

Dependability is the result of sound design, experienced workmanship, and many rigid manufacturing controls.

A rich background of experience stands behind every WATEROUS fire pump—built by workmen who have a deep sense of pride in the precision construction of every pump.

The final test, illustrated here, is a check on the many inspections that have gone before. Here, the pump is being run according to full contract requirements. A record is kept of the performance of every fire pump that leaves the WATEROUS factory.

Waterous SINCE DEPENDABLE 1886

For more complete information about ELECTRO-MATIC fire pumps write:

WATEROUS COMPANY

80 East Fillmore Ave., St. Paul, Minnesota, Dept. 3F11

ELKHART INCREASES POWER IN

HAN-DRAULIC

EXPANDER

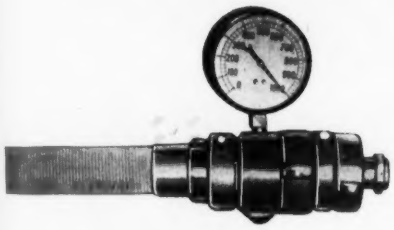
(Formerly Bell and Pihl)

for attaching expansion ring couplings...

Han-Draulic combines the compact, portable advantages of a hand expander with the smooth, controlled power of hydraulic pressure in one complete unit. Plus this, the HAN-DRAULIC Expander has been re-designed to use Elkhart's patented mandrel and segment holder. Segments from ¾" to 3" can be quickly changed.

No. 422

Tests Prove Ability To Handle Dacron Hose



Recent re-design of Han-Draulic Expander increased power by 50%. Couplings attached to Dacron hose by Elkhart's new Han-Draulic Expander held with pressures over 1000 p. s. i.

More uniformity with hydraulic power

The Han-Draulic Expander utilizes hydraulic pressure to exert a smooth flow of power on the mandrel to expand the expansion ring in the fire hose coupling. This same easy action withdraws the mandrel. Check of gauge permits more uniformity in attaching couplings.

Portable

Han-Draulic is not limited to permanent bench or stand mounting. It can be easily moved from one station to another thereby eliminating necessity of trucking hose to a central location.

More units in department

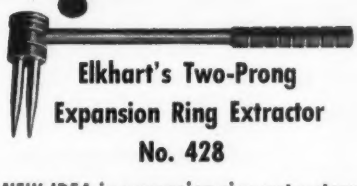
Because of its modest price, Han-Draulic is a practical choice for multiple units in fire departments. Ideal for small department where large unit was not practical.

Choice of mounting

Han-Draulic complete with stand has a storage shelf for holding individual segments. Han-Draulic can be ordered without stand.

Increased Power

Newest model Han-Draulic Expander has been re-designed with greater power to handle coupling requirements of Dacron hose.



Elkhart's Two-Prong Expansion Ring Extractor

No. 428

NEW IDEA in expansion ring extractors

By twisting rather than hammering or prying, Elkhart's new No. 428, double prong, expansion ring extractor frees rings without slipping or damaging coupling. Makes the job easier—saves bruised knuckles too. Prongs of ground and hardened steel, chromium plated.

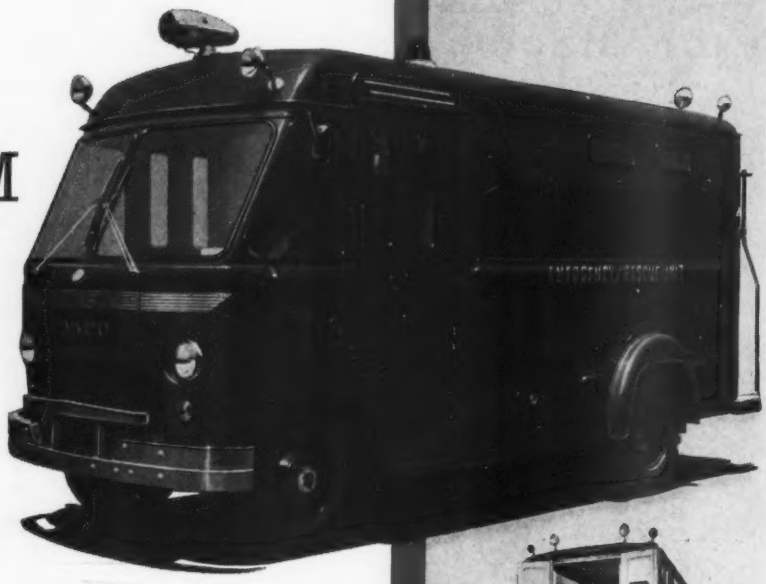
ELKHART BRASS MFG. CO., Inc.

ELKHART, INDIANA

More Than Half A Century of Fire Fighting Progress

The greatest life-saving advancements come from DIVCO

The new DIVCO/M-M Emergency Rescue Vehicle



the rescue truck designed by rescue squads

Every inch a lifesaver, the Divco/M-M Emergency Rescue Vehicle fulfills your need for specialized equipment capable of holding 12 men or five stretchers with a huge cabinet space of more than 120 cubic feet for additional equipment storage.

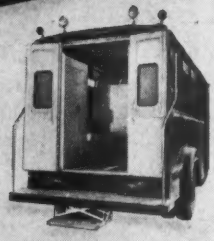
A forward-control van type vehicle offering excellent maneuverability in tight places and great visibility, the new Divco/M-M Emergency Rescue Vehicle rides on the famous Divco rugged, multi-stop chassis, proved in more than three billion miles of operation.

Road speeds in excess of 60 MPH are attained from the 6-cylinder overhead valve 114 HP engine. Total weight with standard equipment is 8,400 pounds with a gross vehicle weight up to 14,000 pounds.

The Divco/M-M Emergency Rescue Vehicle can be built to your specifications within the many available Divco Chassis and Body Shells—MM interiors and equipment options.

Contact your Divco or Miller-Meteor Distributor today for complete details.

DIVCO



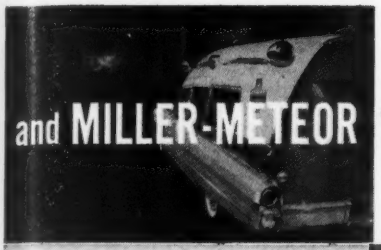
Rear platform extends a full 16 inches, features four-way non-slip tread steel plate. Chromed safety hand rails are provided both right and left as well as above rear door. Rear step (optional equipment) folds back under platform. Optional work lights on top of truck feature swivel base.

Interior view shows roomy 26-inch aisleway of four-way steel tread. Included are electric power exhaust ventilator, hanger rails, eight-inch house lights (110 v.), fold-away stretcher brackets shown in folded position, standing cabinets with shelves, underseat cabinets to hold stretchers and 15,000 BTU gasoline heater that runs independently of truck motor.

DW

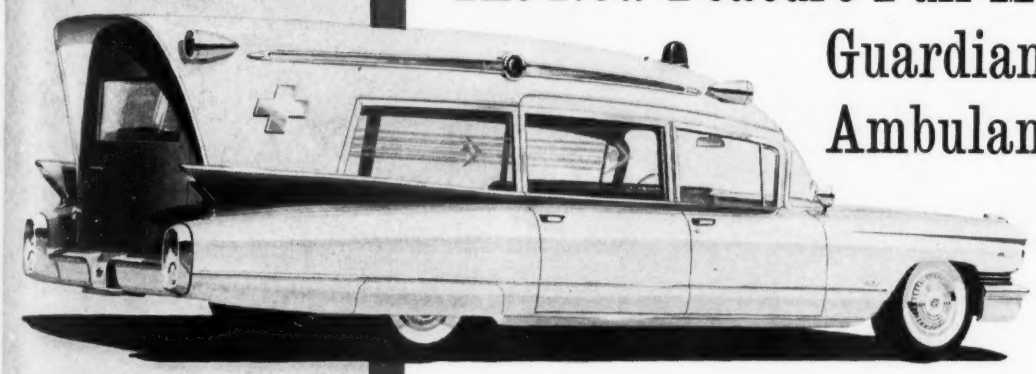
DIVCO TRUCK DIVISION · 22000 Hoover Road · Detroit 5, Michigan

DIVCO-WAYNE CORPORATION · AMERICA'S NO. 1 TRANSPORTATION SPECIALISTS



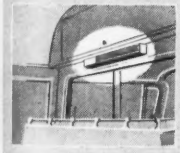
and MILLER-METEOR foremost names in specialized transportation

The New Feature-Full M-M Guardian Ambulance

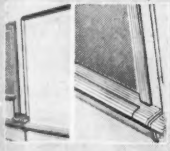


Handsome weather shield around rear door protects interior when rear door is open, or when rear window is lowered. Built-in flood light illuminates entire rear area for safe, easy loading.

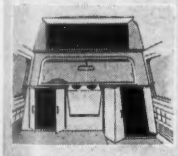
Electrical plugs in rear bumper for emergency rescue tools, lights and quick battery recharging.



Germicidal ultraviolet lamps (optional) sanitize and decontaminate ambulance interior in seconds.



VaniShades afford privacy, disappear into window sills. Exclusive and standard on all M-M ambulances.



Special dispensary cabinets available. Stainless steel tops and Formica finishes make cleaning easy.

Superb riding comfort. New frontal roll for leg ease, new inner design and dramatic new styling.

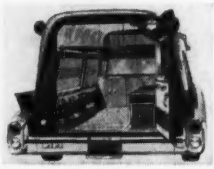
a spectacular new concept in life-saving efficiency

There's a whole new standard of emergency vehicle design within your reach today in the distinctive new Guardian—the world's greatest ambulance by Miller-Meteor.

Unprecedented loading ease, vastly increased interior working room and built-in conveniences are artfully combined with a rich and distinctive appearance to put the Guardian ambulance way out front of everything that's gone before in this highly specialized field.

With the M-M Guardian you are ready to provide the most in performance, and to arrive with the authoritative look of advanced efficiency and speed that counts so much on the scene of action.

Your Miller-Meteor Distributor has the complete story for you. He can also supply you with full information on the Divco/M-M Emergency Vehicle. Ask about both!



Huge 46½" high by 45½" wide vertically-mounted rear door opens easily, yet never extends beyond side of car. Recessed, lighted bumper (optional) and low floor level increase loading ease. Exclusive design greatly increases headroom and width clear to back, taking fullest advantage of wide Cadillac ambulance chassis and high 52" headroom. There are convenient storage compartments at rear under floor, and immense storage facilities up front over partition and still more storage areas at side.

MILLER-METEOR DIVISION · *Bellefontaine, Ohio*

DIVCO-WAYNE CORPORATION · AMERICA'S NO. 1 TRANSPORATION SPECIALISTS

New all-"Dacron" Porter Bonded Fire Hose takes this kind of hose-killing abuse in stride. On test for two years by the Rochester, New York Fire Department, Porter Hose still does not show signs of wear.

John Hurley, Rochester's Deputy Chief, says, "Porter hose cuts our hose inventory in half... saves up to an hour 'out-of-service' time."

New All-"Dacron" *Porter*® hose loves work like this ...shows no wear after two years of use!

This new all-"Dacron" Porter Bonded Double-jacket Hose is making friends with fire fighters and fire departments all over the country. No other fire hose can match Porter hose on all these counts:

Eliminates drying—Its bonded double-jacket of "Dacron" defies moisture . . . can be repacked wet without fear of mildew or rot . . . saves depot trips for dry hose . . . cuts hose inventory in half.

Resists tough—wear All-"Dacron" Porter hose lasts many times longer than ordinary double jacket hose under the most severe usage. It even takes the rugged abuse of abrasive ice and corrosive chemicals.

Lighter, more compact—New all-"Dacron" Porter Hose takes 30% less space, so many more sections can be packed into a truck.

It's no wonder so many departments are switching to this new all-"Dacron" Porter Bonded Double-jacket Hose . . . no wonder, when only half as much hose does the job better and stays on the job longer. Get all the facts on this new and improved fire hose.

See your Thermoid Division distributor or write *Thermoid Division, H. K. Porter Company, Inc., 200 Whitehead Road, Trenton 6, New Jersey.*

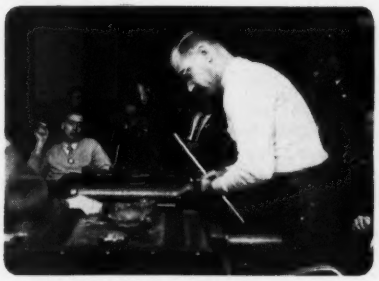
THERMOID DIVISION PORTER **H. K. PORTER COMPANY, INC.**

PORTER SERVES INDUSTRY: with Rubber and Friction Products—THERMOID DIVISION; Electrical Equipment—DELTA-STAR ELECTRIC DIVISION, NATIONAL ELECTRIC DIVISION, PEERLESS ELECTRIC DIVISION; Specialty Alloys—RIVERSIDE-ALLOY METAL DIVISION; Refractories—REFRACTORIES DIVISION; Electric Furnace Steel—CONNORS STEEL DIVISION, VULCAN-KIDD STEEL DIVISION; Fabricated Products—COLDFORM DIVISION, DISSTON DIVISION, FORGE AND FITTINGS DIVISION, LESCHEN WIRE ROPE DIVISION, H. K. PORTER COMPANY de MEXICO, S. A.; and in Canada, Refractories, "Disston" Tools, "Federal" Wires and Cables, "Nepcoduct" Systems—H. K. PORTER COMPANY (CANADA) LTD.

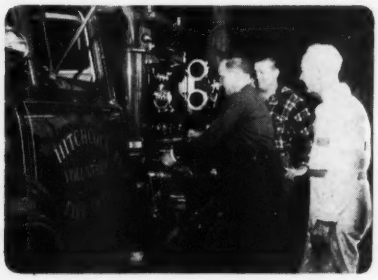
A FIRE CHIEF GOES TO SCHOOL

Typical of the thousands of fire chiefs and crewmen that each year attend the John Bean Fire School, Chief A. G. Terrabonne of Hitchcock, Texas is seen here as he completes his course with a group of fellow firemen from all parts of the country. Chief Terrabonne knows that keeping abreast of modern fire-fighting methods, like the John Bean High-Pressure Fog System, is the surest way to guarantee his community the safety and protection with which he is entrusted. That's why this free training by John Bean fire-fighting experts is available the year 'round to you and your men as a part of the regular service that goes with every John Bean truck. Put yourself in Chief Terrabonne's place as he is seen below in some of the many stages of his own training.

ADVANCED FEATURES of the John Bean Firefighters are first learned in the classroom, where Chief Terrabonne and his group study the proper function and operation of the equipment they will soon be using.



FIRST-HAND EXPERIENCE is an important part of each fireman's training at John Bean. Here Chief Terrabonne learns the proper care and maintenance of his new equipment by actually doing the work himself under expert supervision.

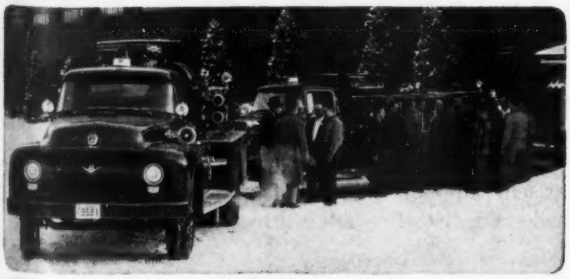


GETTING THE FEEL OF IT! Following a day in the classroom, Chief Terrabonne and one of his crewmen, Cecil Cruse, receive individual training from factory specialists on the operation of their own equipment.

LIVE FIRE FIGHTING of both Class 1 and Class 2 fires is practiced by each student at the John Bean proving grounds. Here, Chief Terrabonne quickly knocks out a building fire with John Bean High-Pressure Fog.

BURNING OIL TANK . . . . one of the most difficult of all fires to combat . . . is easily and quickly put out by members of Chief Terrabonne's group with the triple action of John Bean High-Pressure Fog.

18 GALLONS OF WATER—18 SECONDS LATER . . . and the raging fire in this 18 x 36 foot oil pit is completely extinguished! Dramatic proof of what John Bean High-Pressure Fog can do when the going is rough.



BETTER EQUIPPED — BETTER TRAINED! As Chief Terrabonne and Cecil Cruse take delivery of their new truck and return to Hitchcock, Texas, the people there can well be thankful. For with them they bring the confidence and skill to give their community the hard-hitting, split-second protection for which John Bean is known the world over.

See your John BEAN representative, or write today to arrange for a High Pressure Fog Fire Fighter demonstration

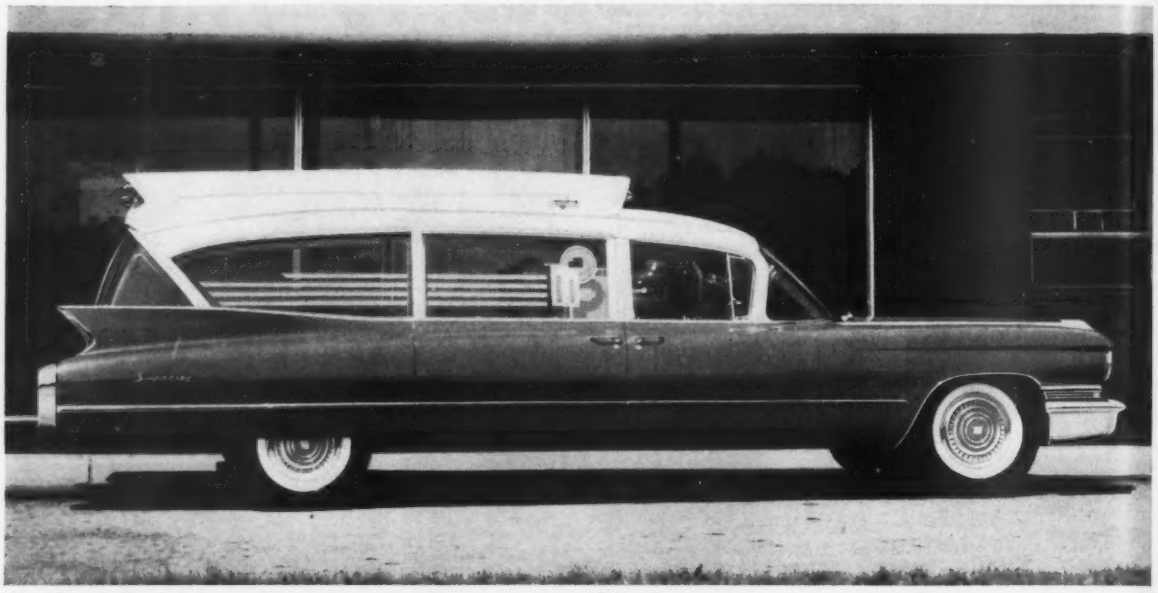
JOHN fmc FOOD MACHINERY AND CHEMICAL CORPORATION ® **BEAN**

Dept. 126
Lansing 4, Michigan

P. O. Box 145
San Jose 3, California

A DIVISION OF
FOOD MACHINERY and CHEMICAL CORPORATION

RELIABILITY UNLIMITED...



Above: Superior Royale Rescuer, 48" Headroom, Cadillac chassis.

Below: Superior "Suburban" Ambulance, 46" Headroom, on Pontiac chassis.

SUPERIOR Ambulances and Rescue Cars

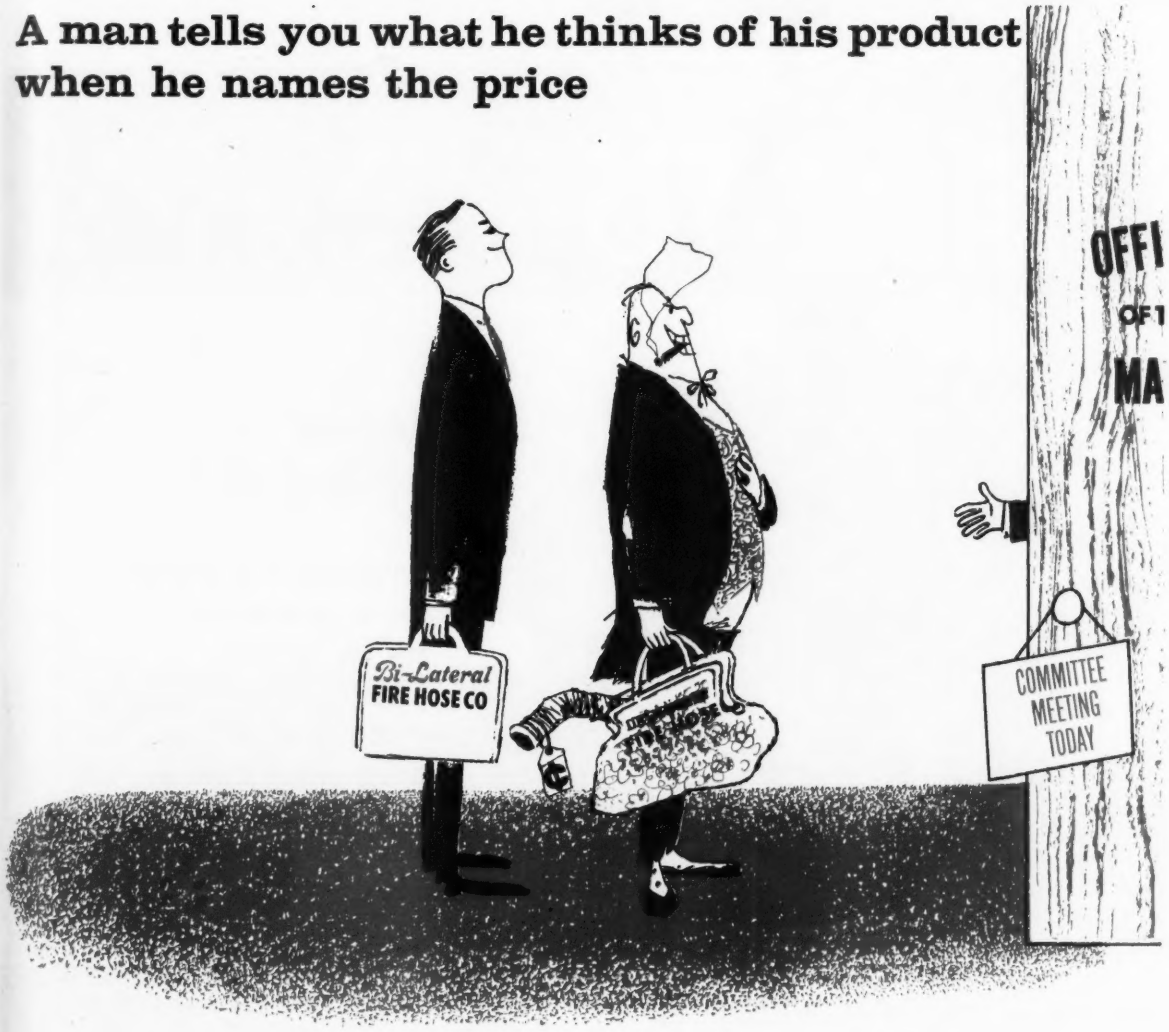
Whatever your emergency needs, you'll find the answer is Superior—the only complete emergency fleet—five headroom models on two famous chassis, especially designed for dependable, heavy-duty emergency performance day after day.

Together with advanced automotive styling, every Superior emergency unit offers more headroom, more work space, more room for auxiliary equipment and supplies, plus Superior's famed welded steel body construction—features that add up to greater efficiency, longer, low-cost operating life. Why not ask your Superior Distributor to arrange a test drive.

SUPERIOR COACH CORPORATION • LIMA, OHIO

SUPERIOR'S COMPLETE EMERGENCY FLEET. *On Cadillac chassis:* 42" Headroom Ambulance; 48" Headroom Rescuer; 54" Headroom Super-Rescuer. *On Pontiac chassis:* 40½" Headroom Ambulance; 46" Headroom "Suburban" Ambulance.

A man tells you what he thinks of his product when he names the price



"... It is unwise to pay too much, but it's worse to pay too little ... When you pay too little, you sometimes lose everything ...

"There is hardly anything in the world that some man cannot make a little worse and sell a little cheaper, and the people who consider price only are that man's lawful prey."

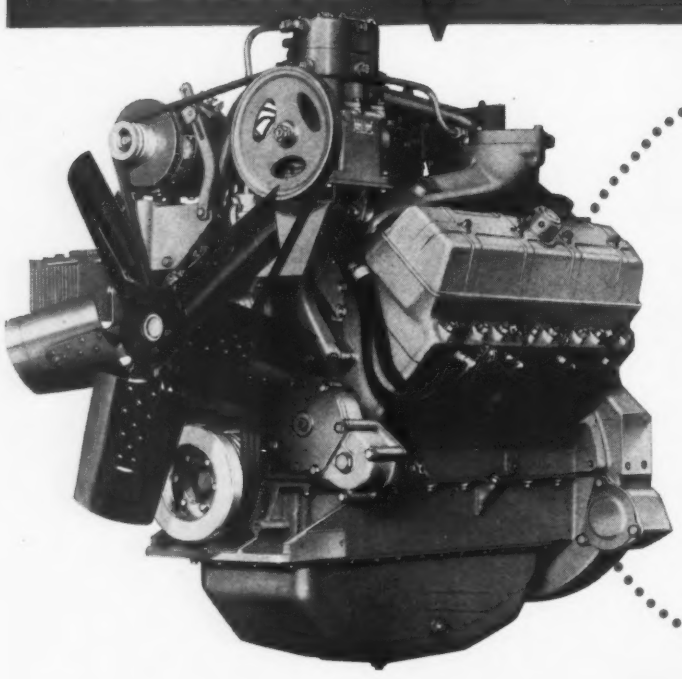
—John Ruskin

Bi-Lateral will *not* sacrifice quality to be low bidder. Fire Departments take pride in their equipment and in their efficiency record. Our *first* concern is to see that they get the proper, *reliable* tools to work with.

Your Bi-Lateral Representative will be very happy to explain to you how you save lives and money with Bi-Lateral Fire Hose—Bi-Lateral "Aquaseal" mildew protection; reinforced ends and point-of-fold reinforcement. He can also explain Bi-Lateral *Hose Record Cards ... proof* of Bi-Lateral's superiority.

Bi-Lateral®
FIRE HOSE COMPANY
20 North Wacker Drive • Chicago, Illinois

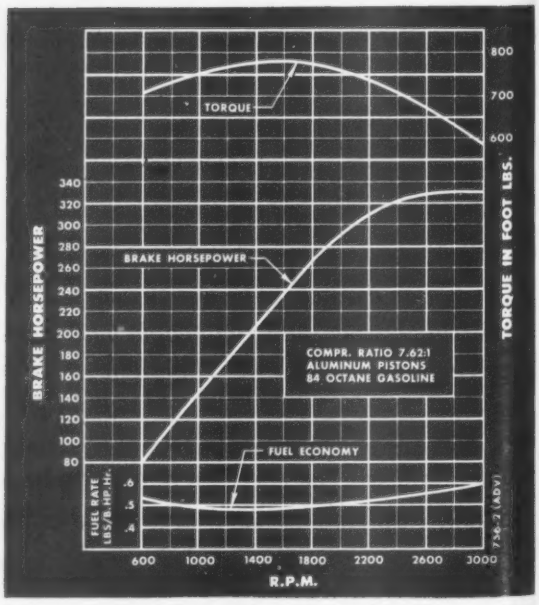
ROILINE V8 for FIRE FIGHTING



Model H884

ADVANCED V-8 DESIGN
330 MAXIMUM HP.
884 CU. IN. DISPL.
DUAL IGNITION AVAILABLE
QUICK ACCELERATION
GOOD FUEL ECONOMY
LOW MAINTENANCE COST

The ROILINE H884 is a compact, high compression, overhead valve engine with the added advantages of extra speed and power. This flexible V-8 power package is designed for the instantaneous response and quick acceleration necessary to fire fighting equipment. The short stroke design of this engine means slower piston speeds, with a consequent reduction in engine friction, even at high engine speeds. The box-like construction of the crankcase adds extra rigidity and bearing support to the crankshaft. The sturdy forged-steel crankshaft is short, due to V-8 compactness, with large diameter, wide surface bearing areas. The result is smooth operation with the least amount of vibration. Water cooled exhaust manifolds are standard on all H884 models. The combination of V-8 design, sturdy, compact construction, and quick acceleration makes the ROILINE H884 engine a top performer for fire equipment power.



Performance of H884 engine without accessories. Continuous full load should not exceed 80%; intermittent, 90% of hp shown. Ratings conform to I.C.E.I. standards. Governors set for 2850 rpm idle and 2600 rpm full load. Consult Waukesha Motor Company for speeds for your service.

468

WAUKESHA MOTOR COMPANY, WAUKESHA, WISCONSIN
New York • Tulsa • Los Angeles / **Factories: Waukesha, Wisconsin and Clinton, Iowa**

to gain the seconds that save lives...

NEW

E & J LYTPORT II

RESUSCITATOR · INHALATOR · ASPIRATOR

Speed saves lives! Rescue workers know that the sooner disaster victims are reached, the better the chances are of saving their lives. The new E & J Lytport II—the result of over thirty years' experience in making emergency equipment—is the ideal unit for dependable, fast-action resuscitation, inhalation and aspiration.

- ***EASY TO CARRY*** . . . only 28½ pounds. Rounded corners, over-size handles, perfect balance.
- ***COMPACT*** . . . only 9½" wide, 10" high, 24" long. Fits easily into car, truck or ambulance.
- ***DEPENDABLE*** . . . pre-set pressures and simple control provide proper aid under any conditions.
- ***NEAT APPEARANCE*** . . . green Fiberglas case is impervious to water, oil, grease and chemical sprays—easy to keep clean.
- ***VERSATILE*** . . . and easy to use. No special skill required. With added hose, aid can be brought to victims at any distance from the unit.

Ask your fire equipment dealer to demonstrate the new E & J Lytport II soon.

E & J . . . FIRST NAME IN RESUSCITATORS

OHIO
Ohio Chemical

OHIO CHEMICAL & SURGICAL EQUIPMENT CO.
(A Division of Air Reduction Company, Inc.)
Madison 10, Wisconsin

Ohio Chemical Pacific Company, Berkeley 10, Calif. • Ohio Chemical Canada Limited, Toronto 2, Ontario • Airco Company International, New York 17, N. Y. • Cia. Cubaña de Oxigeno, Havana

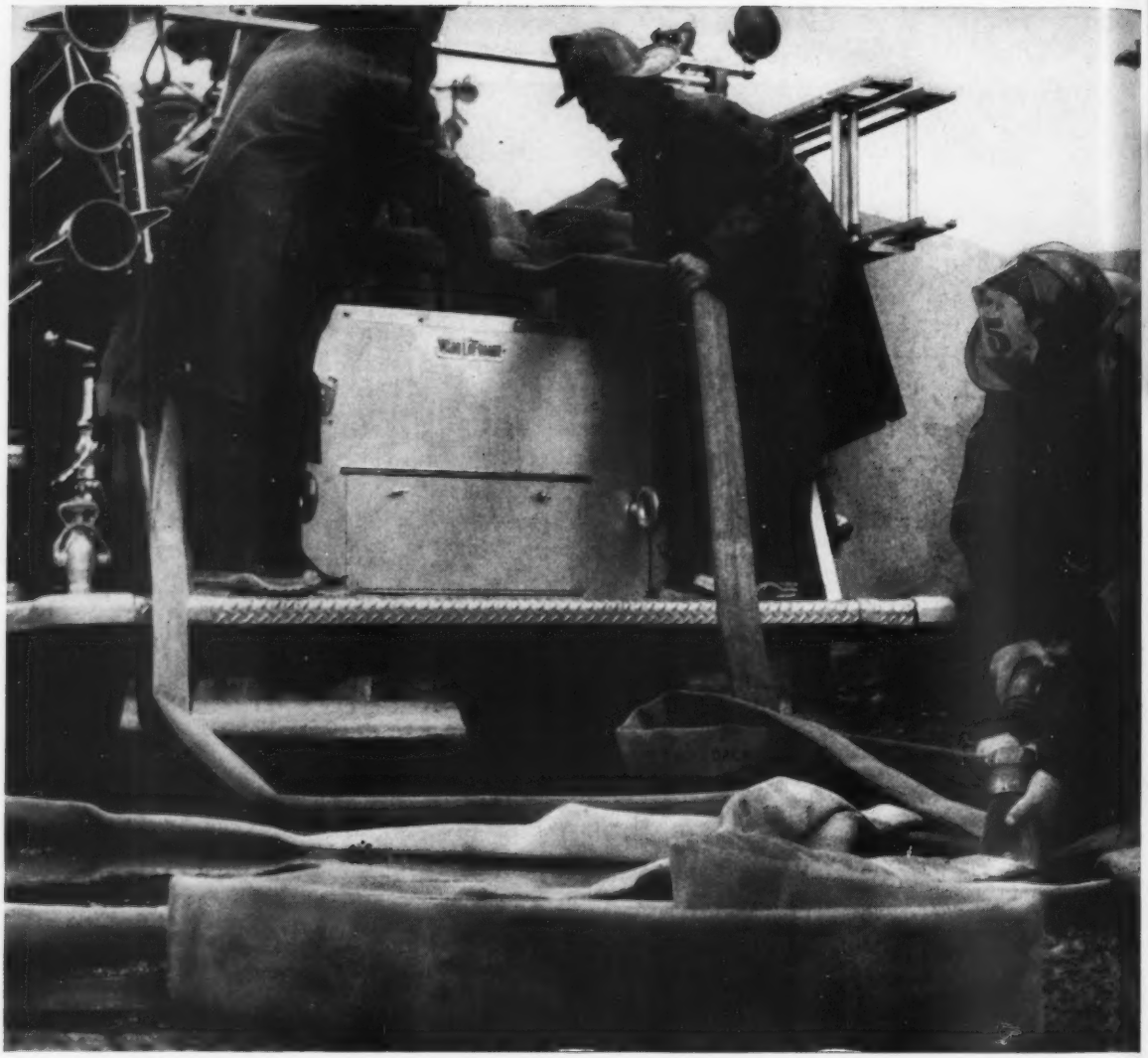
AIRCO (All subsidiaries or divisions of Air Reduction Company, Incorporated)

Dept. FE-3

MAIL TODAY!
Ohio Chemical & Surgical Equipment Co.
1400 East Washington Avenue, Madison 10, Wisconsin

Check below:
☐ Send descriptive folder on the new Lytport II.
☐ I would like a personal demonstration of the Lytport II.

NAME_____
ADDRESS_____
CITY_____ ZONE____ STATE_____



Now...repack hose without drying!

New hose jacketed entirely with DACRON® is not damaged by mildew

polyester fiber

Here's revolutionary news for firemen—hose you can repack *wet* without danger of damage from rot or mildew! The reason—new hose jackets made entirely of Du Pont "Dacron"* polyester fiber. Just drain, recouple, reload—that's all there is to it.

Tests prove new hose of "Dacron" is not weakened or damaged by mildew . . . eliminates the need to dry or change hose after each run . . . lets you stand ready to answer calls without delay.

And at a fire, where seconds count, lightweight hose of "Dacron" handles easier, quicker . . . saves you precious time. Light but tough, hose jacketed 100% with "Dacron" resists damage from abrasion and wears much better than cotton hose, has improved resistance to chemicals and oils, gives years of more dependable service.

When you buy hose, be sure it's the best—hose jacketed with all "Dacron". See your supplier . . . or write for sources and interesting folder on "The Hose That Needs No Drying." E. I. du Pont de Nemours & Co. (Inc.), Textile Fibers Dept., Room 31E Centre Road Building, Wilmington, Delaware.

*"*Dacron*" *is Du Pont's registered trademark for its polyester fiber*

Enjoy THE DU PONT SHOW WITH JUNE ALLYSON, Monday nights, CBS-TV

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

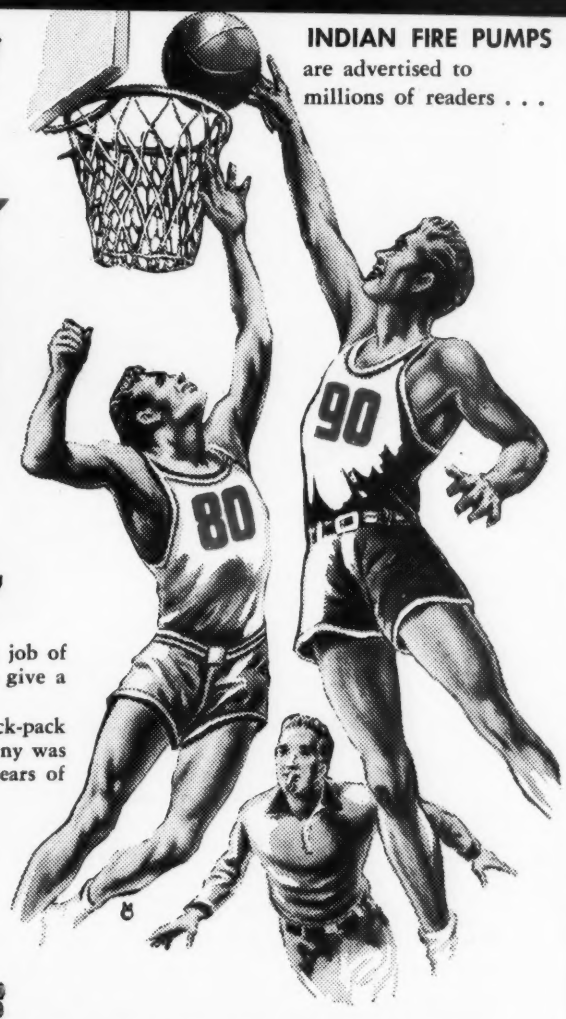
They're BOTH GOOD!

No. 80 and No. 90

INDIAN

FIRE PUMPS

"ALWAYS ON THE BALL"



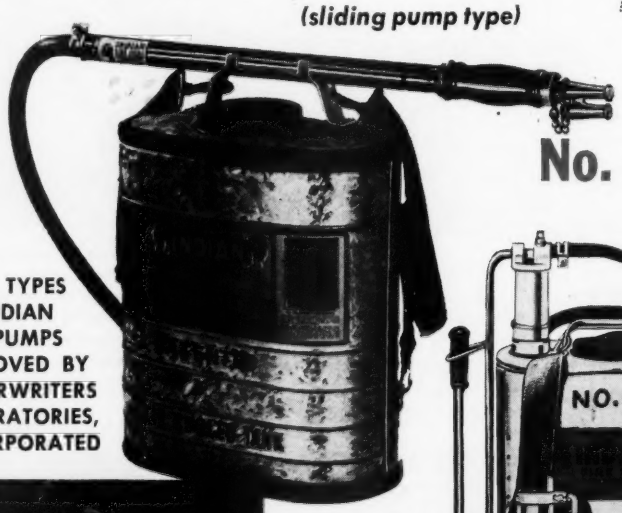
INDIAN FIRE PUMPS are advertised to millions of readers . . .

Fast, accurate **INDIAN FIRE PUMPS** are star performers when there is a job of fire fighting to be done . . . either model may be depended upon to give a good account of itself.

Select No. 80 or No. 90 styles and be assured of having the back-pack extinguishers which are choice for Quality the world over. Our company was established in 1888 and into all our products has been built many years of manufacturing research and experience.

No. 90 INDIAN Fire Pump

(sliding pump type)



BOTH TYPES OF INDIAN FIRE PUMPS APPROVED BY UNDERWRITERS LABORATORIES, INCORPORATED

No. 80 INDIAN Fire Pump

(lever type pump and handle)

Typical comment from users:

"I can honestly say **INDIANS** *are worth their weight in gold."*

*"***INDIAN FIRE PUMPS** *are the most important equipment in our department."*

Send for NEW Catalog

D. B. SMITH & CO. "FOR SEVENTY YEARS THE LEADERS" **406 Main St., Utica 2, N.Y.**

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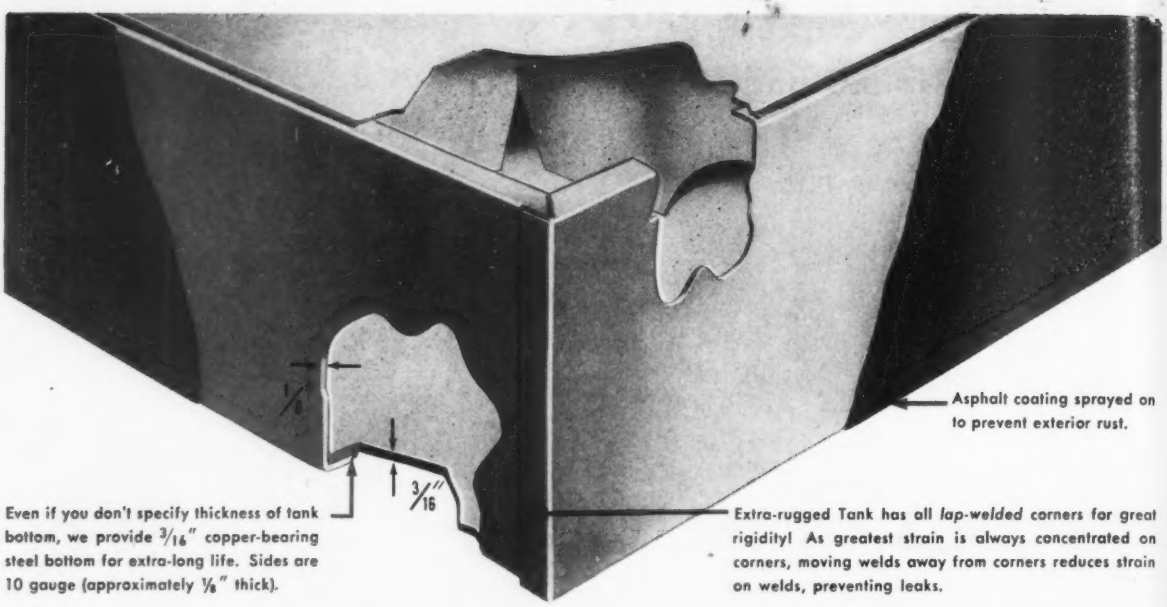


Asphalt coating sprayed on to prevent exterior rust.

Even if you don't specify thickness of tank bottom, we provide 3/16" copper-bearing steel bottom for extra-long life. Sides are 10 gauge (approximately 1/8" thick).

Extra-rugged Tank has all *lap-welded* corners for great rigidity! As greatest strain is always concentrated on corners, moving welds away from corners reduces strain on welds, preventing leaks.

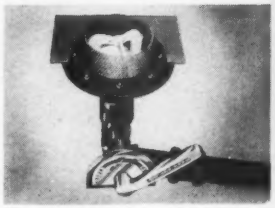
You get *more* superior features on American Fire Trucks even though you don't actually specify them...

You can order American Fire Apparatus with confidence that *our* rigid standards of quality *carry far beyond* your written specifications.

For example, corners and seams on all American booster tanks are *lap-welded* — not corner welded. This greatly increases rigidity — resists twisting strain — prevents troublesome leaks. *And whether you think to specify or not, all* tank bottoms are 3/16" copper-bearing steel for extra years of trouble-free life. Remember — 3/16" is *one-and-one-half times thicker* than the 10 gauge bottoms usually furnished.

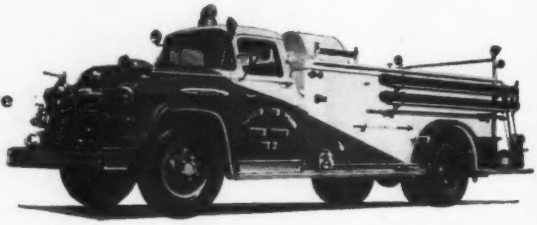
Other standard features include: Multiple drains on pump, all connected to a single, central valve — so a hurried fireman *can't* "forget" to open or close one of several drains.

These and other engineering extras that really count are always provided on American Fire Apparatus at no extra cost — even though *not* mentioned in your specifications! Make sure you get these superior features!

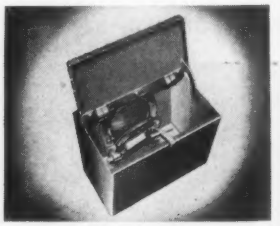


Tank Outlet Sump has large bolted flange — *eliminates* need for costly removable top and resulting gasket problems, or sloping bottom with reduced capacity. Anti-swirl baffles keep air out, prevent loss of prime, and insure complete tank drainage.

Contact your nearest American representative for full details.



Choose either midship or front-mounted pump.



Patented Rear Tank Filler is also Pressure Relief Valve when filling from hydrant. Opens for filling with buckets. Strainer catches debris.

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Fyr-Fyter's *quality hose brands all employ* DACRON* for strength, light weight and long life!

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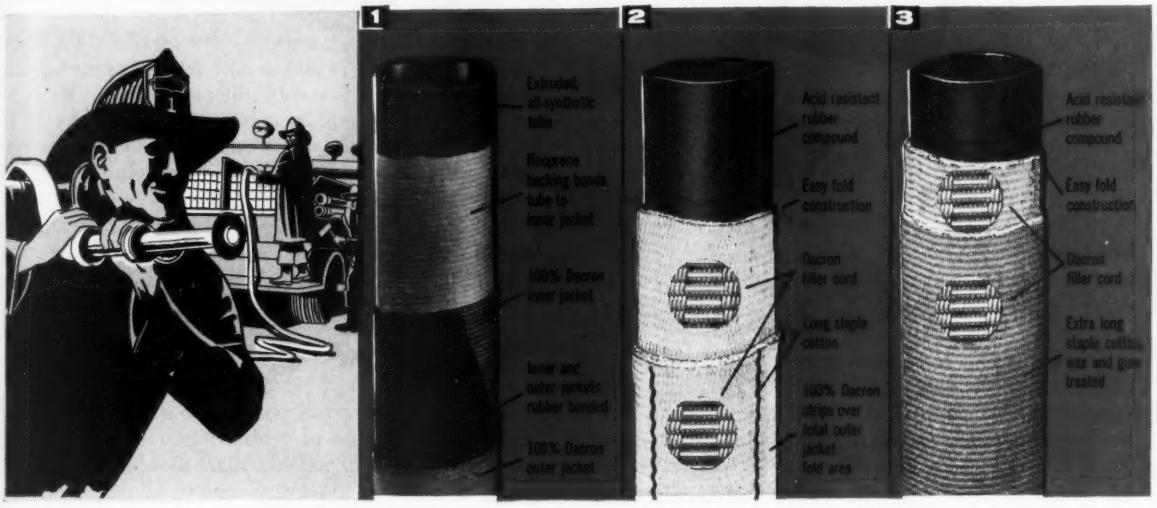

1 AMBASSADOR . . . "Bonded" All-Dacron double jacket. 100% Dacron jackets are permanently "rubber-bonded." Can be dragged miles without fraying. Minimum water absorbency means no drying required, no mildewing, no spare hose needed. Lasts about 5 times longer than standard cotton hose. Tests 600 lbs., in 1½" or 2½" dia., 50 ft. lengths.

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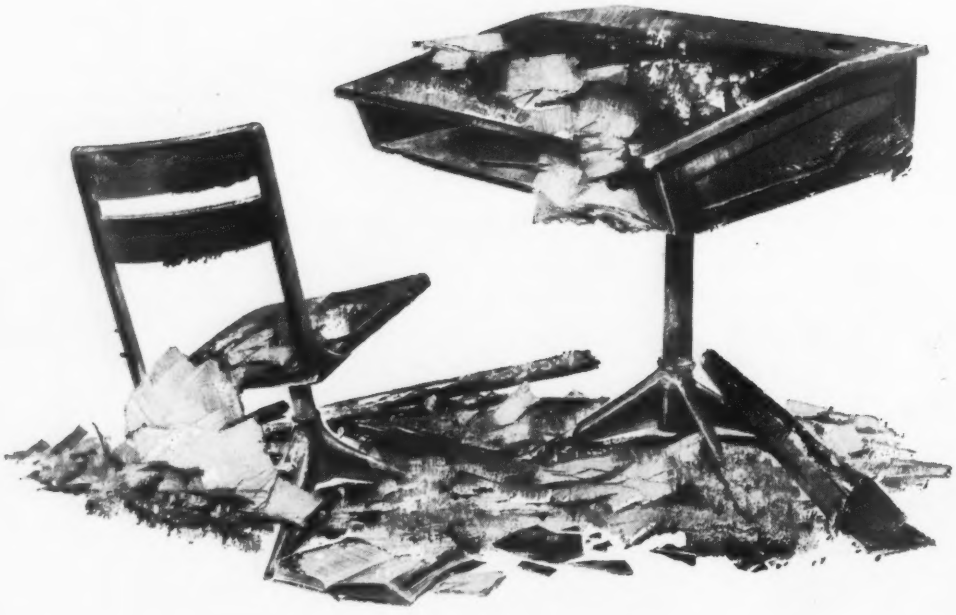
How many lessons do we need?



Smoke floats across a schoolroom floor. A child screams, stumbles and falls into a doorway. Hysteria fills the hallways. Trampled bodies jam the exits. The fire's a roaring demon now consuming . . . consuming . . . consuming.

The story is not new. It happens in cities throughout our country — not just Chicago. And each time it happens the public is shaken from its apathy. We are suddenly aware because the statistics are children now. But for how long will we be aware? The ugly truth is — an aroused citizenry is not aroused for long. And again tragedy waits for its opportunity — *our own short memories.*

How many lessons must we learn? 12,000 people died last year in fires — 2100 were children. Yes, these are "statistics". But each was a "loved one" to someone. *And the real tragedy is — all of the lives could have been saved.* Here's something you can do to prevent such needless tragedies . . .

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FIRE ENGINEERING

VOL. 113, NO. 3 MARCH, 1960

THE JOURNAL OF THE FIRE PROTECTION PROFESSION SINCE 1877

A Month To Remember

February 1960 exacted a heavy toll of injury and, in some cases, death to firemen from coast to coast. The hazards of the profession have long been stressed by all authorities interested in the cause of better fire protection and fire fighting methods and a rapid review of recent accidents indicates that with little exception the causes are routine. These include explosion, building collapse, and traffic accidents which appear all too frequently as common pitfalls facing the most safety-conscious fire fighter. There are indications that some new possibilities will also plague those dedicated to the preservation of life and property.

Random examples from across the country during the past month point up the risks which constantly harass firemen and weigh heavily upon responsible fire officials. On February 13 one Boston fireman was blown from a ladder 20 feet to the ground and others were struck by falling facade tile when a smoke explosion ripped through a five-story business building. All five required hospitalization.

New Jersey fire departments were especially hard hit. Early in the month three Bayonne firemen were pitched from an aerial ladder in an unusual mishap which still puzzles fire officials. Fortunately, these men suffered no broken bones but were severely bruised and shaken up.

A crescendo was reached during the week of the 14th. In Hoboken a fireman was thrown from the back step of a pumper following a collision with an automobile driven by an unlicensed person. Death resulted within hours of the accident. On the same day a Bayonne fire captain and three firemen were seriously burned in a flaming crash with a gasoline tanker, of the same aerial truck referred to previously.

On the following day Clifton and Passaic suffered from the whims of fire. The driver and aide to the chief of the Passaic Fire Department had a leg severed below the knee when a section of falling wall from a five-story building struck him as he dived for cover beneath an aerial truck. Practically at the same instant one deputy chief of Clifton required hospitalization when he was struck by falling debris during the same building collapse. The accident also caused injury to eight other Clifton and Passaic firemen.

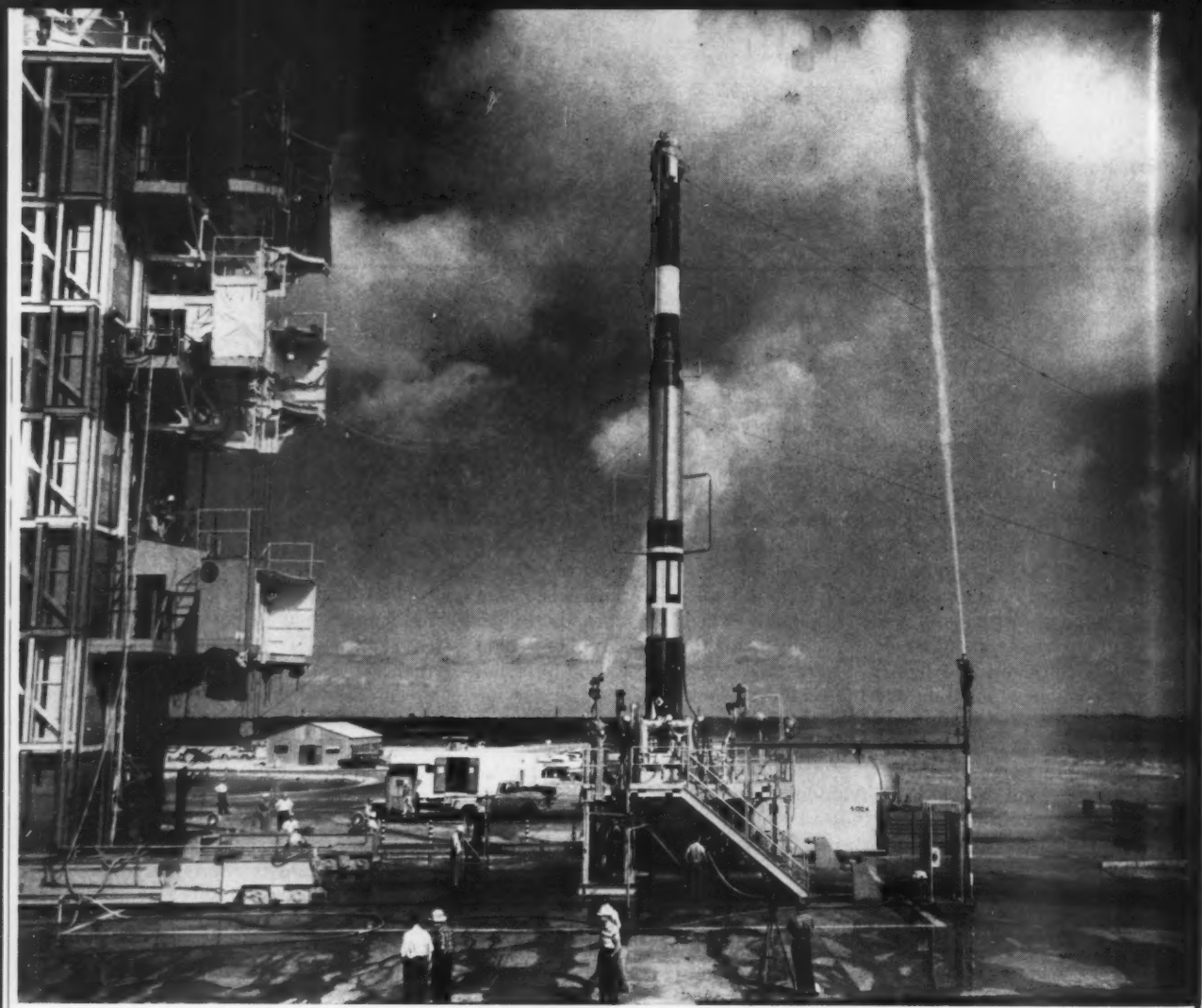
Building collapse also claimed the lives of three St. Louis fire fighters, two of them captains, when the interior of a three-story building suddenly gave way. Two of the victims lived for some time under the debris as their comrades struggled in vain to free them. In the same collapse 10 additional fire fighters were injured, one critically. Houston, Texas, also felt the sting of chance when four firemen battling a refining tank blaze at a petroleum and chemical plant were burned on the face and hands when a propane caustic scrubber exploded.

The foregoing are general examples which point up the hazards facing the fire service every hour of the day and accepted as a calculated risk. Emphasis on recognition of danger signals is stressed by fire service officials, but frequently cannot be applied before the catastrophe occurs.

Health hazard is a subject which has worried the entire profession at times and press reports of two recent incidents involving policemen have again caused some misgivings among fire officers. A New York policeman, recently responded to an emergency where a woman was having breathing difficulty. While awaiting an ambulance the patrolman attempted mouth-to-mouth respiration in an effort to save her life. This was to no avail and the woman died of meningitis, a highly contagious disease. At present the officer is confined to his home by medical orders until it is determined whether or not he has contracted the dread malady. Another police officer in the Pittsburgh area is also under observation after exposure to the same disease in a very similar manner.

The developments in these cases will be closely watched. Hazards to life in the daily occupation of a fire fighter have previously been well catalogued, but with the increase in our pace of living these same dangers have multiplied. Unfortunately, many of them are hidden from human view until it is too late to take counteraction. It is possible that lacking clear cut warning signs of disaster, these men are being expected to jeopardize their own lives well beyond reasonable duty to the public.

Hlow O'Brien



The fixed deck pipes at the Vanguard launching pad discharge 500 gpm in patterns ranging from a straight stream to wide-angle fog
—Photo courtesy Akron Brass Manufacturing Co., Inc.

Fixed nozzle at the Vanguard launch site is shown discharging penetrant foam which cools while it blankets, protecting the launching pad and nearby facilities from the heat of blast-off
—Photo courtesy Akron Brass Manufacturing Co., Inc.

FIRE PROTECTION AT CAPE CANAVERAL

By FRANK HANIFIN

FIRE ENGINEERING is one of 16 engineeering publications invited by the U. S. Air Force to visit the Air Force Missile Test Center at Cape Canaveral recently. This article is based on personal observation at the test center, and on an interview with Fire Chief Norris Gray who commands the fire fighting forces there.

PAN AMERICAN WORLD AIRWAYS, which operates the Atlantic Missile Range under the direction of the Air Force Missile Test Center, maintains a fire department at the Cape Canaveral missile launching area. The department is commanded by Fire Chief Norris Gray, who has been stationed at the base since October 1949; first as a civil service fire fighter, and since 1954 (after Pan American was awarded its contract) as an employee of Pan American's Guided Missile Range Division. Prior to 1949, he was stationed at MacDill Air Force Base, Florida.

Chief Gray has under his command one deputy chief, six assistant chiefs, 122 fire fighters, a chief inspector, five inspectors, two mechanics and six communications operations employees. The inspectors and mechanics are assigned primarily to fire prevention and to inspecting and servicing sprinklers, local fire alarms and the 4,500 extinguishers in the missile test area.

The Air Force Missile Test Center, as part of the Air Force's Air Research and Development Command, maintains and operates the Atlantic Missile Range to conduct Department of Defense missile tests and space experiments, and to gather performance data on missiles tested. The AFMTC headquarters are at Patrick Air Force Base, Florida; its missile launching site is approximately 18 miles north of Patrick at Cape Canaveral. The launching site is Station 1 on the Atlantic Missile Range, the better than 5,000 miles of ocean area over which the AFMTC flight-tests missiles and related equipment. The "Range," extending from Canaveral to Ascension Island in the South Atlantic Ocean and beyond, is instrumented with a series of island-based tracking stations supplemented by special Air Force aircraft, and ocean range vessels to gather performance data on missiles, rockets and satellites tested over its facilities.

Extensive facilities

The 15,000-acre test area at Cape Canaveral includes the launch complexes, pads and blockhouses; support buildings for servicing and testing missiles and components; a power plant; a central control building; a LOX plant; two cafeterias, and two fire stations.

One of these stations, an 11-stall facility, is the largest in government service and is located in the Cape's industrial area. The other, a six-stall station, is near the old Cape Canaveral lighthouse, a landmark on the peninsula. This station is close to some of the launch pads and sometimes must be evacuated shortly before lift-off time. Incidentally, the area evacuated before lift-off depends on the type of missile and the location of the launch pad in relation to other areas.

When Chief Gray came to Cape Canaveral 10 years ago, the only equipment at his disposal was two Army decontaminators and a 400-gallon tanker. In those days, the Cape was covered with underbrush and inhabited by only a few persons and many rattlesnakes. Any fame it possessed was because of the good hunting and fishing. Shrimp boats docked and unloaded at a pier extending 300 feet into the ocean, and the lighthouse was the most imposing structure on the peninsula.

Apparatus and equipment

Today, the fire department at the busy base is equipped with seven crash-fire fighting trucks, five O11A's and two O11B's, each of which carries 1,000 gallons of water, 100 gallons of foam and 40 gallons of chlorobromomethane; three fire fighting trucks (O6's) which carry two tons each of low pressure, liquid carbon dioxide; two 500 gpm pumpers (530A's); three 750-gpm pumpers (750A's); two 1,000 gallon tankers; two emergency-rescue trucks (R2's), and a 500-gpm pumper modified to carry special equipment such as demand breathing apparatus, 2½-inch and 1½-inch hose, all types of nozzles, missile propellant clothing and first aid equipment against missile propellants. There is enough equipment to supply 12 men.

Maintenance of apparatus and equipment is complicated by the fact that the vicinity of Cape Canaveral is one of the worst areas in the United States for salt spray corrosion.

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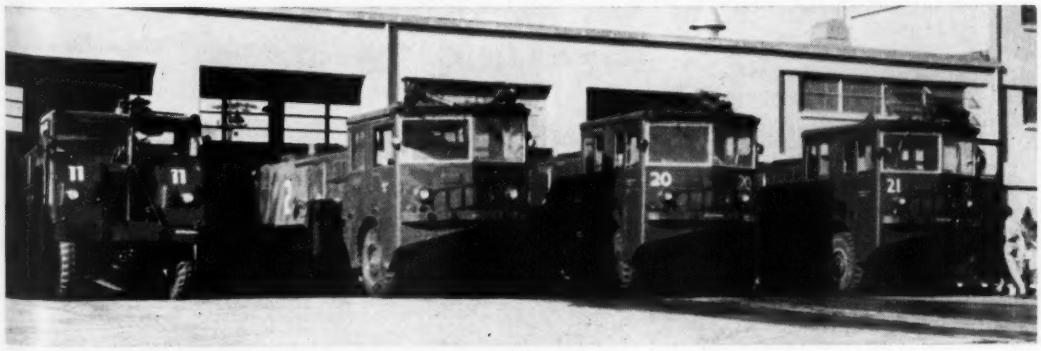
RCA MTP Photographic Laboratory photo

Fire Chief Norris C. Gray



Headquarters fire station at Cape Canaveral with some of the apparatus. From left to right are: O6, carbon dioxide truck; O11A and O11B's *—Official RCA MTP Photographic Laboratory photo*

Pre-launch shot of Atlas 4C showing flame bucket at pad 12

Continued from previous page

Fire protection at the pads

Each launching pad is protected by from four to eight 2½-inch and fourteen 1½-inch all purpose nozzles which deliver up to 11,000 gpm. In addition, two nozzles are directed at the missile in such a way as to knock it over where it will do the least damage if it malfunctions on the pad. Spray headers distribute a pattern of water beneath the stand. At the base of each pad there is a steel flame deflector which resembles a steam shovel bucket. The back of the flame bucket is perforated with thousands of tiny holes, through which 30,000 gpm of water are forced. The flame bucket deflects the missile's exhaust flames from the vertical to the horizontal, and washes them out into a concrete flume behind the pad.

Each pad has two or more hose reels with 150 feet of high pressure 1½-inch hose for minor fires or fuel spill washdowns. There are fire hydrants at each pad or complex so heavy fire streams may be used, or hose lines attached to the pumps of crash rescue vehicles to enable them to remain in operation without having to refill their water tanks.

At lift-off time, practically a river of water is flowing over the deck of the launch pad. This immense volume of water is supplied from 18 and 36-inch mains from two separate pump houses. One pump house has six 5,000-gpm diesel pumps, and the other has eight similar pumps. The system provides ample water for the flame buckets and for domestic use and for fire fighting. It is supplied by a 48-inch main from the City of Cocoa, and 6 and 8-inch wells on the Cape provide additional water if needed.

Getting rid of the water after it has served its purpose poses somewhat of a problem since the water table at Cape Canaveral is only between 2 and 3 feet and the soil is sandy. As a solution, a concrete flume has been built behind each launch pad to receive the excess water.

Fixed deck pipes installed

Recently, fixed deck pipe systems have been installed to protect various sections of the launch facility and mainly cover the RP-1 tanks and area. These systems may be operated from the immediate vicinity or remotely from the blockhouses.

The deck pipes at the Vanguard launching pad, for example, discharge 500 gpm of water in patterns ranging from straight stream to wide angle fog. Elevation, direction and control of pattern may be accomplished electrically by remote control.

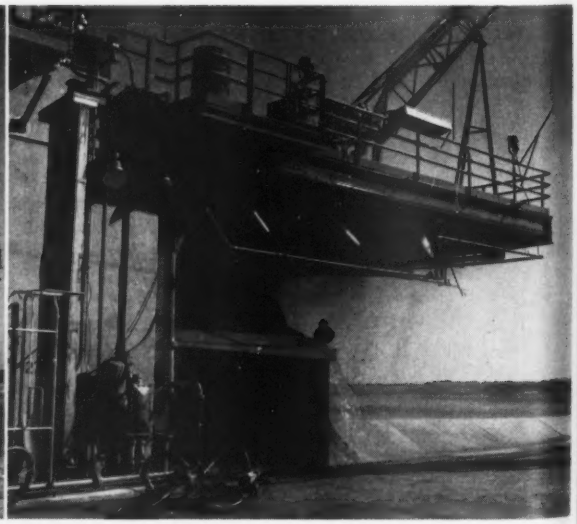
To increase the effectiveness of the water stream, a penetrant foam is injected into the water line. This is done by pressurizing the penetrant tank with nitrogen. The penetrant is proportioned at a 2 per cent rate with the water. This solution, when discharged from the baffle type nozzle on the deck pipes, creates a foam with an expansion of 7.5 to 1. The foam has tremendous cooling as well as blanketing effect, and protects the launching pad and surrounding facilities from the heat of the blast-off.

Countdown operations

For the fire fighters, as for everyone connected with the AFMTC, the dramatic countdown is a time of increased responsibility and activity. This numbered and timed sequence of events and checks that must be conducted during the last few hours before a test missile is launched, normally lasts about six to eight hours. During this time the missilemen check countless switches and valves; they warm up and start missile subsystems; check the readiness of launch facilities and range stations, and load propellants aboard the missle.

One assistant chief, designated a missile chief, and from five to eight fire fighters are on duty at the launch complex from the start of the countdown until the missile is launched. Prior to the start of, or during the countdown procedure, the missile is

Flame bucket at Thor complex 17A discharging coolant water into flume behind pad —*Official USAF photos*



Adjustable 1½-inch spray nozzles fixed for fire fighting are shown discharging at Thor complex 17A

filled with fuel. Liquid oxygen (LOX), which will provide the oxidizer for the fuel, is then pumped into the oxidizer tanks. Since LOX boils at —297.4°F., the rate of evaporation is high and replacement must continue until immediately before launching. To cut down evaporation as much as possible, the missile is precooled.

A half hour before lift-off, additional back-up crews of fire fighters are sent to a predetermined safe area, and the crews in the fire stations become the third line of protection. Before the launching, all the men directly involved with the launch preparations at the pad are evacuated from the missile test area to the predetermined safe area. Since the area evacuated sometimes extends beyond the fire station at the lighthouse, the crews there are often moved back. Operating personnel who must remain in the launch site finish their work in the protection of a reinforced concrete blockhouse near the pad, from which the missile is launched by remote control. Blockhouse construction varies according to the type missiles to be launched from the adjoining pad. In general, the walls are approximately 2 feet thick and the roof about 5 feet at the edge and 8 feet at the crown. The dome of a blockhouse for heavier ICBM launching complexes is covered with 7 feet of sand. An ICBM blockhouse is built to withstand a blast of 50,000 tons of TNT at 50 feet, and is equipped with bank vault type doors.

Missile malfunctions

If a missile malfunctions on or near the launch pad, fire fighting must be prompt and effective. The greatest possible number of missile components must be salvaged, not only because of their high instrinsic value, but because they may yield vital information on the cause of the malfunction and point the way to perfecting the "bird." Damage to the pad and service tower must also be prevented or minimized.

Fire fighters, protected by the latest type bunker suits and demand breathing apparatus, respond with crash rescue trucks and conventional pumpers. They head first for the blockhouse. Usually the immense door will have been opened and a pad safety supervisor will wave them on, indicating that all in the blockhouse are safe.

By the time the fire fighters reach the pad, blast-off flames will have dissipated. Depending on the type propellant used, a layer of foam, CO_2 or dry powder will be laid down. Water, however, in the form of high pressure fog, is the agent most commonly used.

Foam blanket used

Occasionally, the fire fighters will use a tactic that may seem unorthodox to the conventional fire fighter. If JP-X or JP-4 was used as a fuel for the missile and LOX was the oxidizer, the men will first lay down a blanket of foam. After all fire is out, they will go in with a fog line and apparently break up the foam blanket. The reason for this is that if one gallon of LOX and one gallon of JP-4 mix and are allowed to jell for 14 seconds, the resulting compound has the explosive force of 12 pounds of TNT. The fog stream is used, therefore, after the fire is smothered to break up the dangerous jell beneath the blanket.

Constant training is stressed. Fire fighters go through an evolution with carbon dioxide (O6) truck in background *—Official USAF photo*

Mutual aid

The fire department at Cape Canaveral participates in a modified form of mutual aid. If needed, it will assist nearby communities and Patrick Air Force Base, and Patrick responds to Canaveral if needed. Outside fire departments, however, are not called into the missile test area.

Rescue activities are a responsibility of the fire department, and once each month a full scale simulated missile malfunction drill complete with rescue and fire fighting is conducted jointly with the P.A.A. medical section and its disaster team.

In addition to his responsibility for fire prevention and protection at the launch sites, Chief Gray has the problems that might be met separately elsewhere by the chiefs of an industrial brigade of an extensive chemical plant, and an ordnance depot.

Materials stored

Among the chemicals stored at the Cape are: Hydrogen peroxide, UDMH (unsymmetrical dimethylhydrazine, described as a cumulative poison), all types of alcohols, acids, JP fuel and small amounts of aluminum tri-methyl.

Solid propellants are stored in bunkers built of reinforced concrete 5 feet thick at the top and 7 feet at the base. On top of the bunkers there is a layer of sand 7 feet thick at the top and 30 feet at the bottom. Storage criteria are the same as for ordnance. Launching solid propellant missiles demands a different form of pre-fire planning.

The LOX plant at Canaveral has a capacity of 150 tons per day. The LOX is stored in four 28,000 gallon vacuum tanks to keep it at proper temperature and prevent dangerous boil-off.

Considering the materials stored in the area, it speaks well for the fire safety program that there has never been an accidental death or serious injury at the center. □□

Cities Sued Over Fire

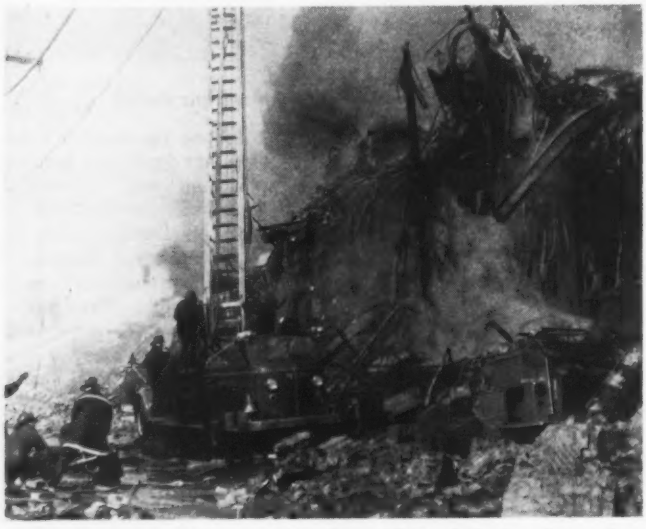
Suit for $448,920 has been filed against the cities of Glendora and Azusa, Calif., as the result of fire which razed the Conrac, Inc., electronics plant in Glendora last summer.

It is alleged the plant blaze was caused by a spark from a practice fire. Glendora and Azusa fire fighters burned down an old house across the street from the plant the day before the Conrac fire.

Joining with the electronics firm in the suit were the Hartford and the Continental Insurance Companies.

Roi B. Woolley

Photo of west wall of building taken seconds before collapse. Firemen were attacking fire on inside at this point while others were setting up turrets and ladder pipes on exterior—*Photos by Tom Lynch*



Clifton firemen continue to employ damaged Truck 1 after danger from further wall collapse is over. Fire fighters in left foreground are setting up portable turret. Rear of squad is visible in right foreground

Destruction of Passaic aerial is viewed by unidentified fireman and public officials. Fireman Jackson lost leg attempting to reach safety under apparatus

Destructive New Jersey Factory Blaze Mauls Fire Fighters

Clifton and Passaic Fire Departments punished by falling walls. Chief's aide loses leg and aerial and squad pumper are demolished

UNPROTECTED STEEL BEAMS and unaccountably inoperative sprinklers resulted in eventual building collapse when fire mushroomed through a factory building covering an entire block in Clifton and Passaic, N. J., on Wednesday, February 17. Before the flames were brought under control, the huge building valued at $6,000,000 was destroyed, one fireman lost a leg, nine others were hospitalized for

North wall of factory crumbles as flames spread through building. Residences in foreground were severely damaged by extension of fire across street —*Wide World photo*

various injuries and several pieces of apparatus were destroyed or damaged.

The 470 by 170-foot four-story factory bounded by Milton, Brighton, Pleasant and Walnut Avenues straddled the Clifton and Passaic city limits with more than half of its length on the Clifton side. It was built in 1920 of brick and steel beams with a concrete first floor and wood flooring in the upper three stories. Due to the slope of the terrain, a concrete and steel basement was constructed on the Passaic side. Elevator shafts were constructed of concrete and steel, brick-faced. A complete sprinkler system was installed and an elevated tank of 75,000 gallon capacity was located about 100 feet from the building as the primary sprinkler supply.

The building was occupied by the Velveray Corporation, manufacturers and printers of synthetic textiles; The Private Brands Co., contract custom packagers of food products; Bartman and Bixer, curtain manufacturers; and Howard Zink, Inc., manufacturer of seat covers.

Alarm delayed?

According to employee reports, the fire started in a Velveray textile laminating machine on the first floor from an electric or static spark which apparently ignited lint. As the operators attempted to use extinguishers on the blaze, a second machine caught fire and the flames were drawn up to the ceiling and into the second floor by an overhead fan. The interior building alarm was sounded and all employees filed out. Those not aware of the fire thought it was the biweekly fire drill.

The Clifton Fire Department responded to the first alarm at 9:02 a.m., under command of Deputy Chief Marius Celantano. At 9:16 a.m. a second alarm was ordered and a general alarm was struck at 9:25 a.m. Assistance was requested from Passaic, which responded with two engines and an aerial truck. At this time the fire was confined to the Clifton side of the plant.

Around 10:00 a.m. it was thought that the fire was under control and firemen inside the building were throwing out smouldering debris when suddenly the fire flashed throughout all floors. According to eyewitnesses, the entire building was aflame in about 90 seconds. Passaic sent two more engines to the scene and a second aerial. Paterson and Garfield were asked for further assistance.

Shortly thereafter, Deputy Chief Romolo Zangrando, who had responded on the general alarm, noted a crack in the exterior wall of the factory and shouted a warning to the Clifton firemen in the building, most of whom escaped via a stairway on the Brighton Avenue side. At the same time, Chief William Killeen of the Passaic Fire Department, who had arrived at the scene only minutes before and was directing his personnel in setting up portable turrets and ladder pipe, sensed impending danger and ordered all personnel away from the building. At 10:20 a.m., within seconds after both chiefs had given a warning, an "explosion" occurred and the fourth-floor walls began tumbling to the streets. Chiefs Zangrando and Killeen were both knocked down by falling debris, the former requiring hospitalization for severe bruises and shock. Ten additional Clifton and Passaic fire fighters were also hospitalized. Fifteen firemen who were still in the building escaped through windows and down ladders before the entire wall collapsed.

The most seriously injured was William Jackson, driver for Chief Killeen. He had been assisting Truck 1 set up a ladder pipe when the collapse occurred. He dived under the ladder truck, but a huge chunk of brick wall struck him on the right leg practically severing it below the knee. The tractor of the aerial and a Clifton high-pressure squad were flattened under the shower of debris. A number of workers' cars parked nearby were also damaged by the falling wall. An ironic twist in the tragedy was learned later from Chief Killeen. Jackson normally would have been on an off-duty tour on the day of the fire. However, he had volunteered to drive the chief to a special conference and was preparing to do so when the alarm was received.

Second explosion

A second major explosion occurred at 10:25 a.m. with sufficient force to knock an electric transformer off a pole on the nearby street. At 10:30 a.m., the center section of the third-floor wall collapsed.

The flames raged unchecked for a few minutes at this point as the fire forces were regrouped by Acting Chief Henry G. Meyers. Residents on Milton and Pleasant Avenues were evacuated. Two nearby frame dwellings on Pleasant Avenue were extensively damaged as the flame and heat extended across the street and two other residences were scorched. The roof of a nearby Weston Biscuit Co. plant also ignited, but was quickly extinguished. Also evacuated were employees in Building 20, Manhattan Rubber Co., makers of fire hose, which is just south of the fire scene. Minor explosions continued to be heard. Clifton City Manager William Holster, who volunteered his services as a fire fighter, said he counted 25 small blasts after the two major ones. These were attributed to containers of naphtha, lacquers, paints and thinners which were employed in the building.

By 10:40 a.m., a force of nearly 200 fire fighters was battling the inferno. All Clifton and Passaic manpower and apparatus were in action, as well as

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Replacement of original tires on Winnetka Truck 70 to meet increased load needs led to use of steel cord tires—*Winnetka F. D. photo*

Cutaway section of 4-ply tire employing steel cords. In addition to claimed advantages of cooler running, high impact strength and puncture resistance, the construction is said to give up to 20 per cent more original mileage
—*Firestone News Service photo*

Steel Cord Tires Boost Load Ratings

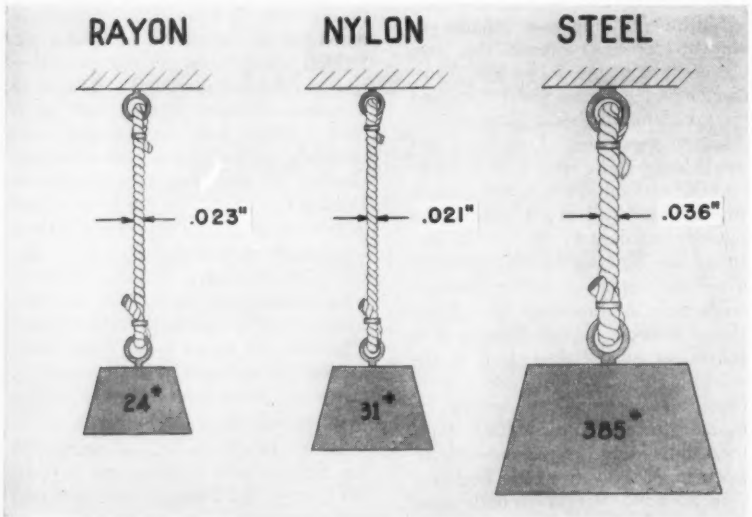
TIRES, fabricated of steel cord instead of conventional nylon or rayon, are being employed to advantage by many municipalities as original equipment to increase the safety factor of emergency fire fighting apparatus. Such tires have a higher load rating than tires of conventional cord. In addition, steel cord offers a solution to the problem of overloading of tires on many existing fire trucks. In some areas, fire department officials are faced with the alternative of buying rims and wheels for larger size tires or finding a strong substitute which would fit the original rims.

Rod A. Porter, fire marshal of the Village of Winnetka, Ill., was faced with such a problem and found that heavy-duty tires with steel cord were an answer.

"It's traditional that no equipment is ever removed from fire apparatus, but more and more is added over the years, increasing the weight of these machines," Porter states. "Often this additional weight is insignificant, of course, but replacement of original tires was dictated both by overload and age in the instance of our aerial truck. Initially, the problem appeared to require the purchase of not only new tires, but also larger size units and the additional provision for larger wheels and rims. This solution would have provided the necessary carrying capacity and safety margin for our requirements. However, an unforeseen aspect to the problem developed when our mechanic examined the apparatus with the foregoing changes in mind and discovered that existing body clearance barely would accommodate the proposed larger tires and wheels."

At this point, Winnetka officials learned of tires employing steel cord with their inherent strength and wear advantages. Replacement was accomplished using a tire size compatible with the original wheels and rims, but utilizing the steel cord type to obtain the necessary increased carrying capacity and safety margin. The cost of new wheel and rim equipment was eliminated and proper clearances maintained from body members.

Chief Porter elected to use 4-ply standard truck tread steel cord on the front wheels of his rigs and 4-ply all-weather truck tread on the rear positions.



Comparison of size and strength of new tire cords—*Firestone News Service photo*

"Besides the strength factor, we learned that the tires can be retreaded repeatedly without fear of substandard performance," he said. "We expect tire life to double, from five to 10 or more years. Drivers also report greater ease of steering," Porter pointed out. "And this is an important factor in ladder truck operation."

Porter reported a savings of $250 on wheel and rim costs by switching to tires made of steel cord. "It is easy to see the advantages of adopting this type of tire," he said.

The history of these tires dates back to pre-World War II days when engineers custom-built and cured the first one in 1939. More than 200,000 were built by 1957 and many hundreds of thousands since. The tires were first used in volume on the front positions of intercity buses.

Advantages of steel cord

The success of the truck and bus tire is attributed to a new steel wire which has doubled in strength over the last two decades. Strength of a single cord has jumped from 180 to 385 pounds. Steel filaments used in the heavy-duty tires measure .0058 of an inch. Made of 70 per cent carbon steel, they are twisted to form steel cords measuring .036 of an inch.

Additional advantages which add up to safety and economy for fire truck operators are as follows:

1. Steel cord used in the special-purpose tires does not "grow" or stretch as do fabric cords. The result is an increase in mileage and preservation of the tire body for future retreads, if desired.

2. The steel cord tire resists injury from impact and from puncturing objects. Holes caused by nails or other sharp objects are prevented from spreading by the steel mesh. The small hole, then, is easily repaired without further damage to the tire.

3. The combination of thin sidewalls and heat-transmitting steel cords lowers operating temperature 35 to 40 degrees. This lower operating temperature increases mileage and life of the tire. Heat, tire experts agree, is the greatest enemy to tire life.

4. Adhesion qualities of steel cord are much higher than other cords. A pull of 185 pounds is required to separate steel cord from its rubber insulation, about twice that of fabric cords. The added strength reduces to a minimum road delays, a critical factor in the operation of emergency equipment.

5. The general durability of the tires has been proved ideal for many punishing uses. For example, they are used to carry heavy loads at high speeds between drilling sites in the Texas oil fields. The tires roll over sharp rocks and mesquite stubs without damaging the tire body. They are also used extensively in rubbish hauling and off-the-highway construction work where resistance to cuts and impact breaks are essential. Cost per mile has been reduced substantially in this type of operation.

The use of tires made with steel cords on fire fighting apparatus provides both economy and an important element of safety. The chance of tire failure during critical operating periods is reduced to a minimum. □□

Volunteers Prevent Spread of Lumberyard Fire in Village Business District

By CHIEF QUENTIN C. WILSON
Eldorado Fire Department

A CALL for fire in the Wasson lumberyard in the business district of Eldorado, Ill., came into the fire station at 6:50 a.m., November 9, 1959. It was immediately transmitted on the radio alerting system. The outside temperature at the time was 32° and the wind was from the south at five miles per hour.

The writer arrived just behind Pumper No. 1 and found the entire building filled with dense black smoke. The firemen were told that the fire had started when a coal heater blew up. Using two high-pressure lines and masks, the men attempted to reach the seat of the fire. The smoke and heat were so dense, however, that it was not possible to advance more than 10 to 12 feet into the building. A 1½-inch line was then put into use, hooked up to a hydrant in reverse lay with two sections of 2½-inch hose. Meanwhile, Pumper No. 2 was ordered out by radio.

At 6:58 a.m., we radioed for mutual aid from three towns: Harrisburg, 8 miles away: Carrier Mills, 15 miles, and Carmi, 25 miles. At 7:25, the Carmi pumper was in operation.

The fire traveled rapidly to all parts of the building through 1,200-foot open runways. Above the runways was a sealed-off attic with no openings. On opening the roof at one spot, heat and flame were so great that it was impossible to operate a line in the opening.

In addition to lumber, the building housed paints, thinners and drums of turpentine. It was apparent that the lumberyard was a total loss and, with the wind blowing toward the adjoining buildings, it became a question of keeping the fire walls as cool as possible. This tactic was successful and at 11:30 a.m., the mutual aid apparatus was released. At 6 p.m., all pumps were released from the scene

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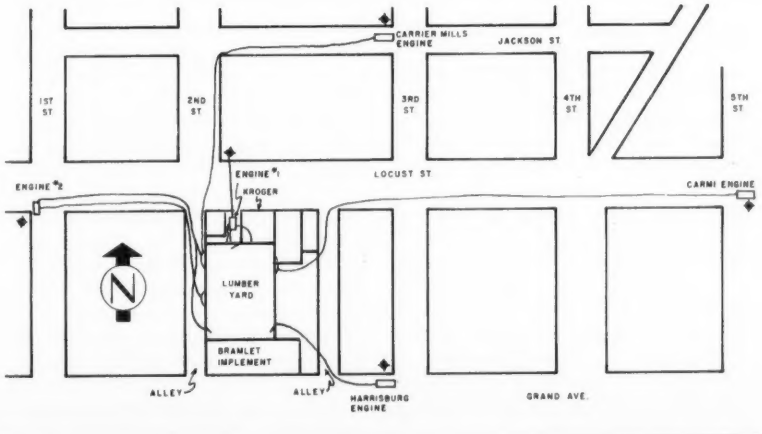

Slide 9: Family members are encouraged to discuss the importance of a fire drill for their home and study a plan of their house to determine possible routes of escape from each room. Such meetings are the basis for the home fire drill program

Slide 14: This girl is opening door in the proper manner, braced to protect herself and with sufficient leverage to close it quickly if greeted by an incoming blast of superheated air

Ohio Promotes Home Fire Safety

Wayne Jenkins (left), chief of the Fire Prevention Bureau, Ohio State Fire Marshal's Office, and the author check photo transparencies which illustrate and promote the home fire drill program

ABOUT THE AUTHOR

Mr. Shingledecker has over 20 years experience as an industrial safety director and since 1951 has been superintendent of fire safety for the Nationwide Insurance Companies, Columbus, Ohio. In this capacity, he works with local, county, state and national organizations to develop fire safety programs.

He is a member of the Rural Fire Protection and the Fire Brigade and Watchmen Committees, NFPA; the Society of Fire Protection Engineers; the American Society of Safety Engineers and is executive secretary, Ohio Fire Brigade Association. . .

By L. E. SHINGLEDECKER

THE IDEA for home fire drills is a result of four newspaper clippings. Three years ago last December, the writer made a one-week business trip that covered four states. During this brief period, each of these states had a house fire in which human lives were lost. The newspapers, of course, covered the tragedies and, probably because Christmas was near and because 11 of the 12 victims were children, these fires made a deep impression.

The stories were clipped to be read and reread. Suddenly it was realized that, in all but two cases, the fire victims could have been saved if they had known beforehand what to do when a blaze occurred.

On returning to Columbus, Wayne Jenkins, chief of the Fire Prevention Bureau, Ohio State Fire Marshal's Office, was contacted and the fire stories and conclusions discussed with him. It was believed that fire deaths could be drastically reduced if fire drills were planned and practiced in private homes before flames ever erupted. It was agreed to stress home fire drills in every safety talk made in the following year.

At first remarks on home fire drills were not too well received. After three months, notes were compared and it was decided that the messages needed to be illustrated and a set of photographic slides would be prepared for this purpose. Through the Fire Prevention Bureau, the fire department at Whitehall, Ohio, a Columbus suburb, agreed to cooperate in setting up picture situations, and Nationwide Insurance loaned the services of a staff photographer.

Need for home fire drills

Chief Jenkins took one set of the illustrations to use in talks throughout Ohio, and a duplicate set was obtained to show in other states. Graphically and dramatically, the slides showed both the need for home fire drills and a pattern which any family might adopt to establish fire drill procedures in its own dwelling. The transparencies certainly helped develop public interest in the home fire drill idea. Before 1957 had ended, Chief Jenkins and the writer were receiving requests for copies of the slides and the accompanying talk.

During the following two years, the slide program continued; many talks were given and the idea won a number of converts. For instance, the Ak-

Slide 16: If normal exits are cut off by flames or heat, don't fumble with windows that are difficult to open. Break out the glass (it's easily done with a chair, as shown here) and escape

Slide 19: It's easier—and safer—to ease out of a window like this and drop to the ground when trapped upstairs by unexpected flames. The girl will hang from the sill before she finally lets go

Slide 20: A ladder may save a life. All phases of a home fire drill, including evacuation, should be practiced until family members know what to do if their house is burning

ron, Ohio, Fire Department successfully promoted the home fire drill concept in the city during Fire Prevention Week last October. The State Fire Prevention Bureau supplied Akron with sets of slides to show to schools and civic groups, and the project won enthusiastic response and support.

This year preparations have been made to promote home drills on a statewide basis. The State Fire Marshal's Office and its Fire Prevention Bureau plan to send slides and scripts to every Ohio fire department requesting them in 1960. The Ohio Fire Brigades Association, a group of industrial organizations from all sections of the Buckeye State, is mapping an off-the-job safety campaign for 1960 which will include an appeal to employees of member industries to conduct fire drills in their homes. Cooperating with the OFBA in this drive will be the Ohio Rural Fire Safety Committee and the Ohio Farm Bureau Federation which has included home fire drills as a part of its statewide safety program for the current year.

To help spread the home fire drill idea, insurance company field representatives may now obtain slides and scripts for special safety presentations in their individual communities. Nationwide is making copies of both the transparencies and narrative available to its regional offices throughout its operating territory.

The slide program, incidentally is under constant review and revision. The sequence of topics presently being shown is:

1. Every 24 hours there are 1,100 fires in the United States. Most of these fires occur in dwellings.

2. By this time tomorrow, 31 people will have died directly or indirectly from a fire, with most of these occurring in homes.

3. Twenty per cent of the 31 deaths will be children 10 years old or younger.

4. Firemen find charred bodies of children in closets or under beds. Why? Because children, when frightened, usually go to a place where they feel the safest. Many children, when they play in the house, like to hide under a bed or in a closet—to them these are good hiding places. Unless previously instructed, it is only natural for them, in case of fire, to hide in one of these two locations.

5. Many people assume that deaths from fire happen in slum areas and in older houses. Also, when they read about tragic deaths in the newspapers, they assume the children involved come from families where the parents don't care what happens. This is only partly true and can give a false sense of security to people who do care what happens. A window in a remodeled house is shown. It is totally encased and would not be an exit in the event of fire.

6. The modern ranch-type home can be a problem. Most ranch dwellings are built with small windows located high from the floor. Also, the bedrooms are in the rear of the house and their only exit leads through the living room, kitchen or garage. Should a fire start in any location, an easy means of escape is hardly possible—especially from the bedrooms.

7. Laws are passed making it mandatory for schools to conduct fire drills at least once a month and both the students and the teachers conduct fire drills.

8. Firemen talk to school groups and industrial groups, emphasizing the importance of evacuating buildings in time of fires. Time is spent developing evacuation programs for schools, plants and office buildings. This is good, but in the location where most fires start and take the greatest number of lives—the home—we seldom give consideration to fire drills, much less to carrying out practice programs.

9. Every family should sit down and discuss the possibility of a fire in its home. Keep in mind that fires in schools and industry usually start in the daytime, but that fires in homes usually start at night when every one is asleep.

10. After discussing the possibility of a fire in your home, study a plan of escape from each room. Discuss each room individually. Discuss the number of ways out of each room and then decide on a plan to follow should fire occur.

11. Everyone in the family should know how to call the fire department, and the department's telephone should be listed on the telephone.

12. Everyone should sleep with his bedroom door closed. Closed doors have saved many lives in industry and will do the same in homes.

13. Should you awaken in the night

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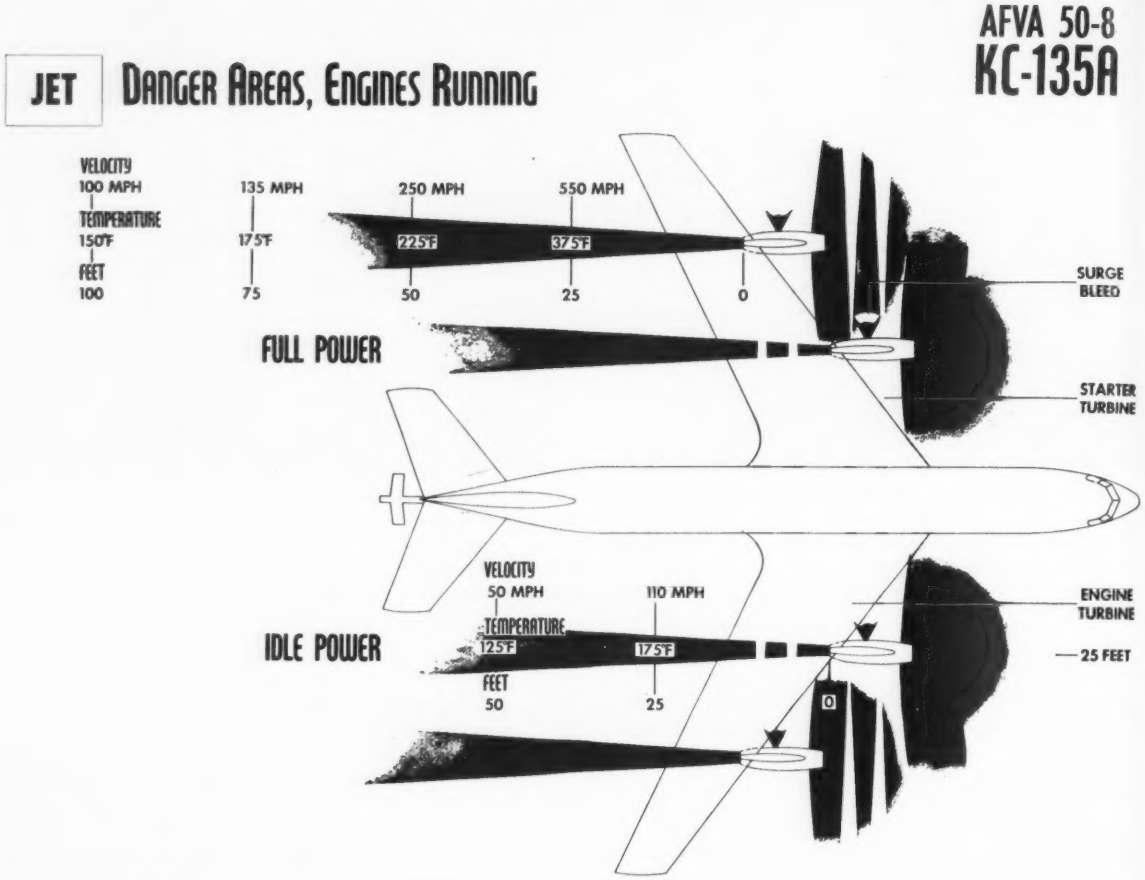


Official U. S. Air Force diagram

Crash Fire Fighting for

Part 2—Rescue and fire fighting tactics

By LIEUTENANT GILBERT J. HAAS

The first installment of this article covered aircraft construction features and hazards.

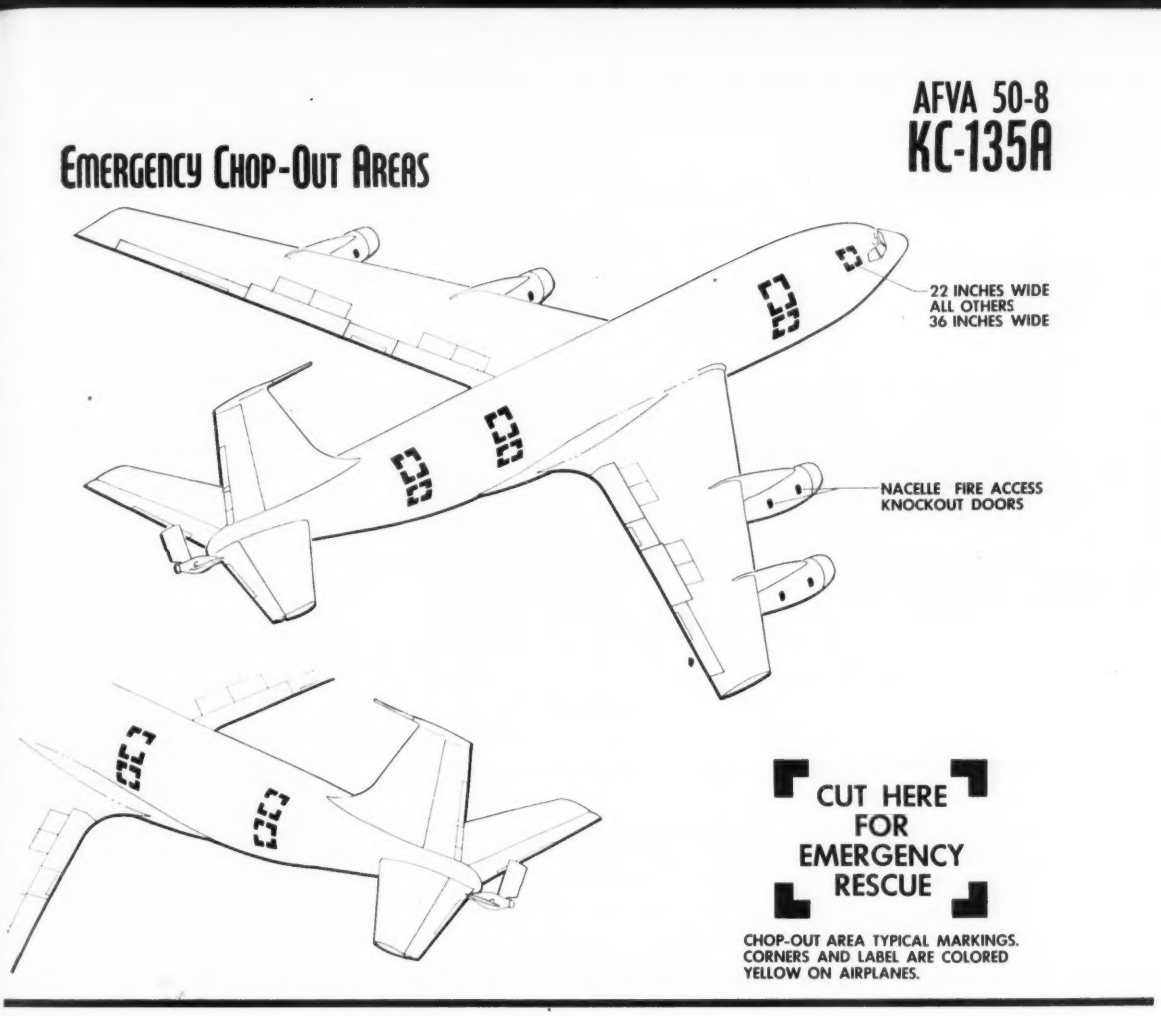
In conclusion, Lieutenant Haas points out some problems peculiar to military aricraft, evaluates various extinguishing agents and recomends rescue and fire fighting techniques.

—THE EDITORS

GUNS MAY BE of the fixed or flexible type. Fixed guns are found in either the nose or wings. Flexible guns in turrets may be abandoned in any position. Caution should be used to stay out of the line of fire. However, unless there is a round in the chamber or a defect in the firing circuit, there is more of a tendency for the shells to "cook off" or burst in the magazine.

Large-caliber ammunition reacts the same way as shrapnel when exploding. Rockets may be lost upon impact. However, if they are found intact upon their launchers, they may be considered very dangerous both from the front and the back. If exposed to fire, ignition will occur in the rocket motor first, usually in about two minutes, blowing fire violently to the rear. As with any other ammunition, keep cooled with water. If it is necessary to remove rockets from their wing launchers, the plug and shear wire at the rear must be pulled first. If trained military ordnance personnel are available, they should be called, time permitting, to handle all explosives or ammunition.

Bombs, torpedoes, depth charges, etc., may "cook off" in from two and a half to five and a quarter minutes, depending upon the intensity of the



Official U. S. Air Force diagram

Structural Firemen

heat. The shock waves from one explosion may detonate all other explosives in the vicinity. Remember there are exceptions to time limits, so don't take chances, keep them cooled. Napalm bombs, which are a jellied gasoline should be treated in the same manner as auxiliary gasoline tanks.

Pyrotechnics, such as flares, Very pistols, smoke grenades, etc., are, in effect, fireworks which usually consist of rapid-burning powder, magnesium or flammables which are readily discharged or set on fire. They may contain small explosive charges to spread the signals. If ignited, they will spread the fire quickly throughout the aircraft. Pyrotechnics are carried in both civilian and military aircraft and may be located almost anywhere in the aircraft. Remove them whenever possible.

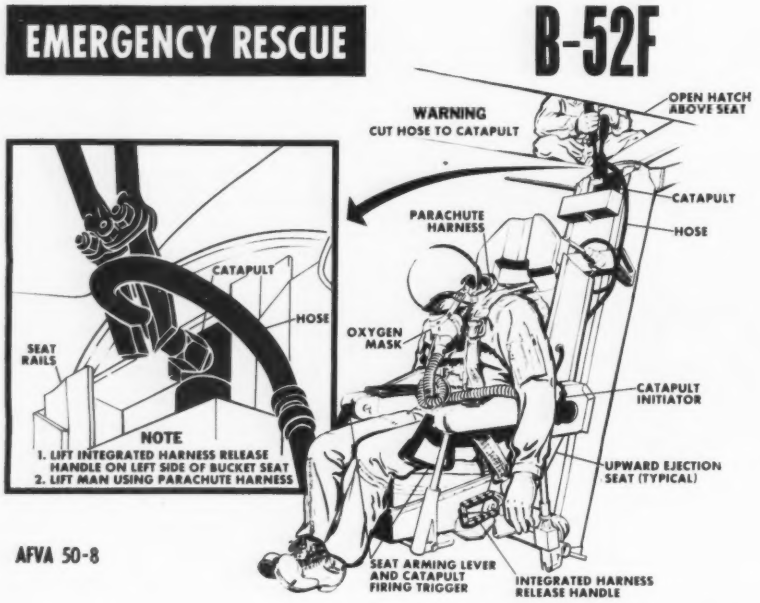
Magnesium, due to its light weight, may be found almost anywhere in the aircraft in the form of castings, engine parts, etc. These may be relatively difficult to ignite from moderate heat sources, due to the fact that the high heat conductivity of the metal removes heat rapidly from the point of application. The metal will, however, readily ignite in a hot gasoline-fed fire. It will melt and burn with a brilliant white light, giving off a distinctive white smoke. The use of nearly any common extinguishing agent may result in a violent explosion. If possible, isolate the burning part. If isolation cannot be accomplished, a commercial metal-extinguishing agent may be used with some success. Due to the fact that these agents are not usually found on a municipal fire apparatus, the most practical thing to do may be to protect the exposures and let the metal burn itself out. Thermite is a flammable metal used in fire bombs. From a fire-safety standpoint, thermite should be treated much the same as magnesium.

Some military aircraft carry secret equipment such as radar, bomb sights, IFF, etc., which are self-detonating. These present no great hazard, although the fire fighter may receive a severe jar if bodily contact is made during detonation.

High-speed jet aircraft are equipped with ejection seats which are used to catapault the pilot and other personnel clear of the aircraft in case of a bailout. These may be extremely dangerous to the fire fighter and are capable of killing both the pilot and the rescuer if caution is not used.

The seat is usually powered by a large-caliber charge which, when set off, projects the entire seat assembly and occupant 30 to 40 feet from the plane. The firing of the seat may be done either by pulling the face curtain directly above the pilot's head, or in other models, by raising the arm rests and pulling triggers in them.

All ejection seats should be con-



Official U. S. Air Force diagram

sidered as operationally ready and extreme caution should be used in effecting the rescue. Special tools have been developed by the Air Force to disarm these ejection seats and, if time permits, military rescue personnel should effect rescue. By no means touch the fire mechanism. "Do not lose your head." If the canopy is found closed, use external canopy release to break in, rather than sliding or forcing it open.

Great strides are constantly being made in the art of warfare and because of the rigid security surrounding such things as atomic and hydrogen bombs, guided missiles and the like, information concerning fire safety in these devices may not be readily available to the civilian fire fighter. The best rule to follow, no matter what the hazard, is a quick extinguishment of the fire.

Rescue

Rescue carries top priority in crash fire fighting. Rescue operations may take any form from assisting dazed passengers from a slightly damaged aircraft to trying to get trapped personnel from a rapidly burning aircraft before it explodes.

Care should be exercised in removal of victims. The probability of injuries received in the crash is great and improper or rough handling could make the injury worse or even result in death. The decision for removal and type of removal depends upon the judgment and training of the rescue worker. Don't kill time, and have the time element kill you.

There have been cases where, under extenuating conditions, limbs have been amputated with knives or axes in order to remove an entrapped victim when death was the only alternate. This should not be considered as a standard procedure but a trained rescuer does what must be done while exercising good judgment. If at all possible, remove all bodies and parts of bodies for the purpose of identification.

Safety belts and shoulder harnesses may be opened by unfastening a single catch, usually found at the victim's lap. Parachute harnesses do not always have to be removed, but it is the best practice. There are usually three catches, one at the chest and and one at the front of each hip. Care should be used in the removal of all harnesses. Caution must be exercised to prevent the inadvertent release of a parachute. The pulling of the rip cord handle may complicate the whole rescue operation. In the event the normal harness releases cannot be used, it is possible to cut the straps with a knife, taking proper care not to injure the victim.

Some thought should be given to the use of water on the men who are in close proximity to the fire. Fire department personnel wearing bunker clothes, part or even full reflective clothing or asbestos suits, are subject to steam scalds if hose streams are played on them and then directed elsewhere. If a cooling agent is once applied to the rescuers or fire fighters, then by all means keep them thoroughly wet.

Foam should be used with care during rescue as it may impair vision if hoods with glass or plastic face protectors are being worn. Rescue men should also be careful not to get gasoline on their clothing.

When going in to make a rescue, tools which may be needed should be taken in so that valuable time will not be wasted by having to go back for them. Such items as a short ladder, axes, wrecking bars, and an assortment of small tools should be kept close at hand.

Extinguishing agents

The three main extinguishing agents presently used by civilian departments in crash fire fighting are water, foam and carbon dioxide.

Water may be used either as water-fog or straight stream. Due to its high rate of heat absorption, water-fog can be used in most cases more successfully than straight streams and may prove valuable in keeping the cockpit and fuselage area cool until rescue has been made. Straight streams may be used on hard surfaces to wash the burning fuel away from the plane.

Foam has been found to be one of the best agents that can be used to extinguish large open gasoline fires, as it is both a cooling and a smothering agent. Mechanical foam is usually used in a premix solution of about 10 per cent. It may be applied as fog-foam under high pressure or it may be supplied in its regular form by three different methods: (1) Applying at the edge of the spill and letting it flow over the area; (2) deflecting or bouncing the stream off an object in the spill area; (3) snowing or shaking the stream over the spill.

Once a good foam blanket has been laid over the spill, care should be taken not to break it up nor to drag lines through it. Water will break up a foam blanket. Never apply water and foam simultaneously and never apply water to a foam blanket. Every fuel spill, if not isolated, should be covered with foam whether burning or not.

Carbon dioxide is good for snuffing out some fires, but it has drawbacks. Large quantities must be used and when applied, should be followed up by foam so that, in spite of the rapid dissipation of the CO_2, there

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Los Angeles County Fights Fire With Logistics

By ROI B. WOOLLEY

Heavy-duty tractor and "low-boy" loaded with "cat" on stand-by at warehouse area for quick transport to fire scene--*All photos courtesy L. A. County F. D.*

THE DICTIONARIES tell us logistics is "the branch of the military science that embraces the details of moving or supplying the armies." Business and industry popularized the term during World War II to cover such functions as procurement, storage, transportation and handling of supplies and related activities. The nation's fire service, which is a billion dollar-plus business in itself, finds the term equally applicable to many of its operations.

All fire departments practice the elements of logistics, consciously or unconsciously, in one form or another. In times of extreme emergency—disasters such as conflagration, hurricane, flood, etc., which can strike anywhere at any time—logistics plays a vital part in survival.

Organizing for logistics

Every well-organized fire department should have one or more persons directly responsible for procurement, storage and related functions of logistics such as inspection and testing. Preferably this should be someone who understands the ultimate application of the equipment and supplies purchased. The function of logistics should not be viewed as an additional duty or side issue; it calls for a responsible, experienced person possessing interest in, and aptitude for the several tasks involved. As an added asset, he should be able to conduct certain tests and evaluate results—even do research when necessary, as well as follow through on new products after they have been placed in service.

It is to be expected every progressive fire department will have its own procurement and logistics problems and must tailor its organization to direct and carry out these functions accordingly. The Los Angeles County Fire Department may not serve as a good criterion in this respect because it has operational problems which are peculiar to itself. However, the following explanation of its organization and operation may help to acquaint the reader with the importance of logistics, particularly in time of serious large-scale emergencies.

Among the special problems which the L. A. County Fire Department faces are these:

Size: The County, 4,085 square miles in area, is larger than the states of Delaware and Rhode Island combined. The fire department is responsible for protecting over half of this area, equal in size to the State of Rhode Island.

Terrain: The protection district runs from the Pacific seashore to mountains rising about 6,000 feet elevation, seamed with deep canyons.

Occupancy: Within the response area is every type of structure from week-end cabins to modest motels and mighty hotels, vast supermarkets and shopping centers, almost every kind of mercantile enterprise and countless manufacturing plants. The County is a crazy quilt of forest and field, desert and beach, inaccessible hinterlands and crowded cities. Fire department services vary from protection of the industrial East Los Angeles district to patrol in remote mountainous areas.

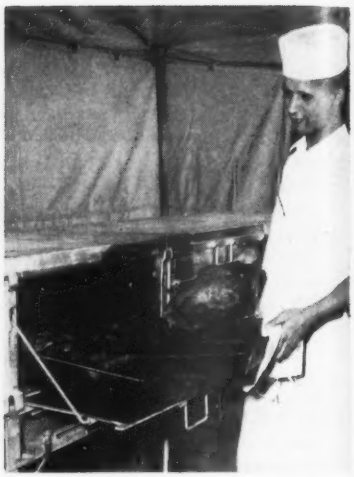
Population: Said to be the fastest growing county in the nation, the population now exceeds five million, of which nearly one and a half million are protected by the fire department.

A fire force of nearly 2,000 personnel presently mans the 105 fire stations and operates some 166 engine companies, 44 mountain patrols, 20 rescue squads and numerous other units. In addition to all types of standard fire fighting equipment and apparatus, they use such facilities as helicopters, earth-movers, portable canteens and kitchens, and other specialized equipment. The increasing use of highly diversified mechanical facilities calls for specialized knowledge, not only of their employment but also of their procurement, warehousing, transportation and maintenance.

The application of this equipment has opened up an entirely new chapter in fire suppression. This has required the establishment within the departmental structure of what is termed the business division, prominent in which is the supply and transportation section.

The business division is responsible for all budgetary, fiscal, personnel, procurement, contractual and warehousing details. To the supply and transportation section, among other duties, goes the responsibility of aiding in the selection of fire fighting apparatus and equipment, of facilitating its delivery and subsequent operation and also of seeing that certain specialized rolling stock and equipment are transported as rapidly as possible to the scene of emergency operations. This is particularly true in the fighting of large-scale brush and field fires.

Typical field mess facilities at Monrovia fire. During five-day action at this blaze, the S and T section provided approximately 20,000 meals



Regular L. A. County Fire Department chef at work in field camp kitchen

"Chow call" for front-line fire fighters. One of the six L. A. County mobile food dispensers in action. Each unit can service up to 100 men

Of some 3,256 requisitions placed by the S and T section in the last fiscal year, 7 per cent were to meet serious emergencies.

To adequately service this highly diversified fire fighting force and its related facilities such as the seven juvenile probation camps, the construction and maintenance section and the forestry division, it is necessary to stock about 4,000 different items. These include automotive parts, first-aid supplies, brass fittings, small and large tools, shelf hardware, building construction material — including plumbing and electrical fixtures, paints and large stocks of canned food, household and other supplies. These are maintained at the department's warehouse at Pacoima, which can best serve the areas which breed the most serious brush fires.

The transportation unit, a part of the supply section, includes eight truck drivers who make regular weekly deliveries to all battalions as well as to the department and probation camps. Vehicles vary from pickup to 10-wheel tractors with low-bed trailers for hauling bulldozers. All rolling stock is equipped with regulation red lights and sirens.

Logistics does not stop with warehousing, procurement and transportation. At Pacoima is also located the department's highly essential hose testing service and other details such as blacksmithing and welding, canvas fabricating, and nozzle and hydrant repairs. In the last fiscal year the blacksmith and canvas shops completed 419 job orders and over a quarter of a million feet of hose was tested and repaired.

The supply and transportation office is located at central fire headquarters. Here such details as records, inventories, mimeographing, requisitions, and other functions relating to logistics are centered.

The section also handles authorizations for payments when purchase orders have been fulfilled and follow-up when needed material is overdue. The supply officer handles all contracts with the County purchasing and stores department and processes changes in property records with the County auditor-controller. Further, he arranges for repairs of equipment and, most important, he is personally responsible for all emergency purchasing.

Logistics in operation

One element which sets the Los Angeles County Fire Department apart from other county fire services is its protectorate over the watershed areas. Due to their nature, watershed fires may require a mass concentration of fire fighters and equipment. It is not unusual to mobilize forces of over 2,000 men and more than 100 pieces of apparatus in the struggle to extinguish these conflagrations.

The history of national disasters is replete with accounts of failures due to inability to provide the behind-the-lines support to those actively on the front lines. Few fire departments have either the resources or the pre-disaster plans for meeting disasters. Commenting on this, County Fire Chief Keith Klinger says: "We can appreciate that no one fire department, however large, can hope to have immediately available all of the many fundamentals that may be required to meet a single major emergency—let alone several different types of disasters. In the Los Angeles area, fires and floods—the latter usually the aftermaths of watershed fires—are what may be termed 'recurring emergencies.' Therefore we have found it expedient to maintain certain reserves which can be thrown into the action with minimum loss of time. These reserves include not only such equipment as helicopters, dozers, ditch diggers and simple shovels, but complete kitchens and mobile food dispensers."

Major Conflagration Plans

Plan I

Plan I comprises a small fire operation handled with equipment and manpower within a battalion, assisted by a small service organization. The following personnel and equipment shall be dispatched when a Plan I is ordered:

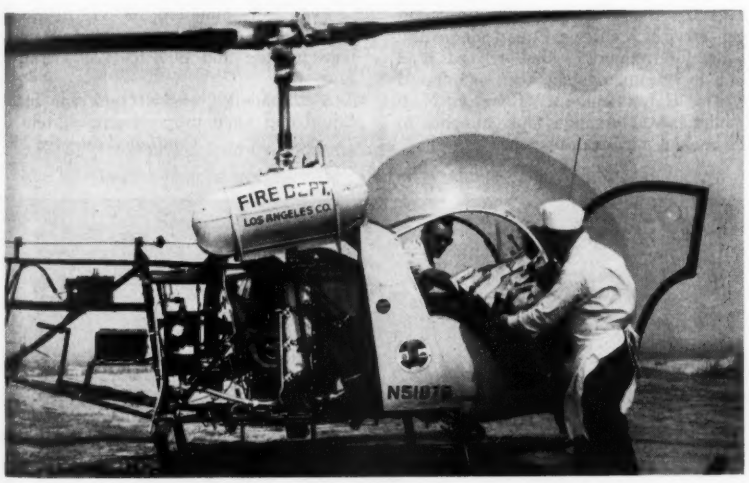
a. Operational chief
b. Camp boss
c. Line mapper
d. Gas dispenser
e. Food dispensers (2)
f. Radio communications truck and technician
g. Dispatcher
h. Equipment repairman
i. Water tenders 1 and 2
j. Camp crew coordinator
k. Tractors (as requested)
l. Tractor supervisor
m. Spotters (for tractors)
n. Photographer
o. Refrigerator truck
p. Fire safety and welfare officer
q. Timekeeper
r. "P" kit from warehouse
s. Rescue 400
t. Fire investigator (County jurisdictional fires only)
u. Chemical unit
v. Aircraft (as requested)
w. Helitack truck and three Helitack crew members
x. Public information officer (in L. A. office)
y. Telephone line repairman

Plan II

Plan II comprises a one-division fire, or larger, requiring a full fire camp set-up with an extended service organization. When deemed necessary, a plans section and additional personnel to staff the service division may be requested. The following personnel and equipment, in addition to that ordered under Plan I, shall be dispatched when Plan II is ordered:

a. Division chief
b. Line chief
c. Service chief
d. Sector chief and crew leaders
e. Assistant dispatcher
f. Backfiring and Helitack crews
g. Air officer
h. Tractor coordinator
i. Auxiliary firemen
j. Fire camp set-up:
    1. Supply officer
    2. Transportation officer
    3. Camp 1—to set up and maintain fire camp
    4. Communications officer
k. Public information officer (assigned to fire camp)
l. Red Cross or Crescenta-Canada Emergency Corps
m. Tool boss
n. Kitchen boss
o. Radio repair crew
p. Telephone repair crew
q. Checker
r. Plans chief, when requested
s. Operational trailer
t. Timekeeper (one extra man)
u. Refrigerator truck
v. State CD communications trailer (when requested)

Note: Any personnel or equipment in either plan, which is deemed unnecessary in a particular instance, may be deleted at the discretion of the operational chief.



Loading lunches on helicopter. Airborne delivery is employed when fire fighters are operating in areas inaccessible to mobile food dispensers

To feed and maintain these attack forces over a perimeter which may stretch for a hundred miles, atop mountains or in canyons, calls for logistics of a high order. Not many of the nation's fire departments employ regular chefs. The L. A. County Fire Department rolls list two cooks and one cook's helper at Forestry Camp Two. The kitchens and cooks at fire suppression camps set up in the field are under the jurisdiction of the supply and transportation section. Over 30,000 hot meals were served in the field during the fiscal year 1957-58, and more than that number in 1958-59. On all major fires, where feeding is to be done directly on the fire line, the first two of the department's mobile dispensers are filled from the fire suppression camp kitchen. Each dispenser can carry enough edibles to amply feed 100 men. A typical fire line meal consists of hot roast beef, mashed potatoes, gravy, vegetable, salad, bread, fruit juice and choice of hot coffee or milk.

According to plan

Logistics and pre-fire or pre-disaster planning have much in common. There can be no effective services of supply without some prescribed action plans. Los Angeles County found this out many years ago from bitter experience. After careful analysis of the problems posed by major brush fires, the department came up with definite procedures for coping with them—Plans I and II.

When the commanding officer at a fire desires mobile support, a request is made through the head dispatcher at central headquarters to activate Plan I. This is relayed to the supply officer for action. There are 21 separate actions applying to this plan. Five of these directly involve the supply and transportation section.

It is the responsibility of the supply office to provide such resources as fuel trucks, at least two food dispensers and food. In addition, Plan I calls for one or more water tankers, a refrigerator truck, fire fighting "P" kit and the necessary stake truck for its transportation, and such other rolling stock as comes within the jurisdiction of the supply office. A "P" kit includes: Four 400-foot lengths of 1-inch hose; four adapter kits; five 10-gallon water cans; two coils of ⅝-inch rope (100-foot lengths); 100-man fire fighting kit; two cases of flares and two GI cans, 55-gallons each.

When the fire is in a battalion other than that in which Forestry Camp Two is located, and continued mobile

Continued on page 247

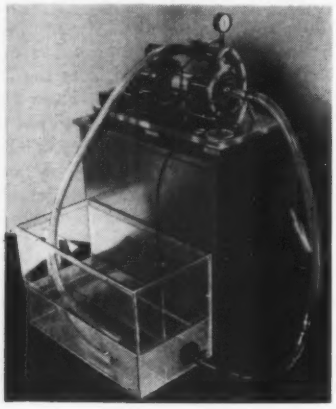
WHAT'S NEW

Among the Manufacturers

- **products**
- **processes**
- **personalities**

Hale Priming Trainer

To meet a flood of requests from fire schools and fire departments, Hale Fire Pump Co. of Conshohocken, Pa., is offering a simplified version of the "Priming Trainer" first shown at the Grand Rapids I.A.F.C. convention last September.



The unit is operated by a 110-volt, 60-cycle a.c. motor and is equipped with a transparent pump face. The company states this makes it possible to grasp instantly the principles of priming which must be understood by fire fighters to insure effective performance. A user may substitute his own tank, or container, in place of the expensive plastic tank used at Grand Rapids.

Complete operating and teaching instructions are included, and a unit may be rented by those who cannot justify permanent ownership.

Firm Changes Name

U. S. Fire Protection Engineering Service, Inc., has announced that henceforth it will be known as Gage-Babcock Associates, Inc. The change in corporate name is said to reflect its growth and diversification into affiliated loss control and management engineering fields. Offices of the engineers-consultants are maintained in Kansas City, Chicago, San Francisco and Detroit.

Portable Hydrant Thawer

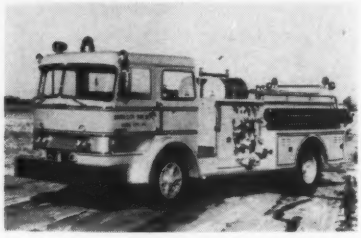
Hauck Mfg. Co., 124 - 10th Street, Brooklyn, N. Y., has announced its new "Fire Engine" superheated steam thawer for frozen hydrants. Using acetylene fuel, it is claimed that 15 psi of steam can be generated in 15 seconds. The unit is said to weigh 110 pounds and is equipped with a 15-foot steam hose and clamps for attaching to fire apparatus.

Platt Buys Link

Platt Sales, Inc., 23 Park Place, New York, N. Y., announces that it has purchased the inventory, design and manufacturing rights of the Link mobile radio line from the Gonset Division of Young Spring & Wire Corp. The entire Link operation will be moved to New York City. The company states it will maintain a complete parts inventory on Link's past and present products to serve Link users.

FWD for Union City

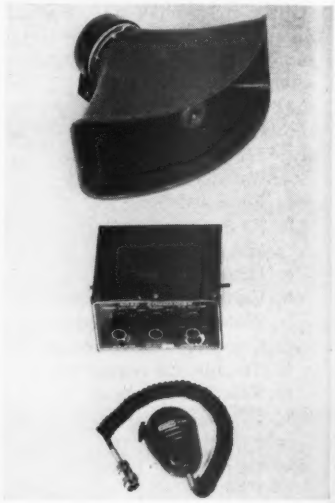
The Union City, Pa., Volunteer Fire Department recently accepted a new FWD 750-gpm pumper which mounts a 500-gallon booster tank.



The FWD Model F2F-77 is equipped with two booster hose reels, 500 feet of 1-inch hose, a 35-foot three-section ladder, a 14-foot roof ladder, a 10-foot aluminum folding ladder and other basic fire fighting accessories. It was manufactured by the fire apparatus division of FWD Corp., Clintonville, Wis.

P.A.—Radio Amplifier

Lawrence Inc., P. O. Box 5106, Seven Oaks Station, Detroit 35, Mich., has introduced the Road Commander, a transistorized mobile public address and radio amplifier. Designed for dashboard



mounting, it is claimed to provide 25 watts for boosting audio output of a radio receiver or as powerful p.a. system. Two speaker models are available and the unit is approved for OCDM matching funds.

Car Emblem Sticker

FD Products, 514 West Englewood Avenue, Teaneck, N. J., is offering a "Dual Glow" emblem for use by fire fighters on automobiles. The inexpensive Maltese cross has a pressure-sensitive back and is said to be reflective at night and extra bright by day.

Fire Fighting Tank Trailer Announced

A tank trailer designed for fire fighting services, chemical and industrial plants, oil refineries, lumber yards and rural fire companies has been announced by Fire Equipment, Inc., Riverton, N. J. The mobile 400-gallon tank, attaches to the back of a truck or wagon.

Two reels mounted behind the tank hold 250 feet of preconnected ¾-inch booster hose and 300 feet of 1½-inch hose.

A 25-gallon fiberglass tank for foam liquid and foam proportioning system is

Continued on page 257

Here's why Eureka® Fire Hose agents are so successful

They have the only multi-woven hose on the market—and made of 100% Dacron fibre.

Here are the advantages of the Eureka Multi-Woven 100% Dacron "Super Paragon"® Fire Hose:

(1) It is the strongest hose on the market because multi-woven. 600 lbs. test pressure.
(2) It is completely mildew-resistant, never needs drying out.
(3) Strongest resistance to abrasion.
(4) The cover can never cause internal chafing.
(5) Accidental punctures caused by sharp objects can be easily detected and plugged.

Proof of the superiority of Eureka is attested by the fact that certain fire departments use this hose exclusively. For example, one large Southern city has been using Eureka for 40 years. A large city in the north Middle West has been using Eureka since 1914; the only other brand this city uses is there for comparison of performance only. Eureka Multi-Woven 100% Dacron "Super Paragon" Fire Hose is equally at home in frigid climates or in damp, tropical climates.

Standardize on Eureka and you'll have the best possible assurance of "Better Protection to Life and Property."

"For greater protection to life and property"

EUREKA FIRE HOSE

Since 1875, Specialists in Manufacturing Circular-Woven Rubber-Lined Fire Hose

1 Market Street • Passaic, New Jersey *Division of* United States Rubber

FALSE ALARMS

The Defense Collapsed

A great crash disturbed the peace of an English court one day, but it brought a quick verdict.

While tenants of five houses were claiming the dwellings were too dangerous to live in, a police sergeant rushed into the courtroom and whispered to the magistrate, "The roofs have just fallen in."

The wife was reading her husband's fortune from the back of his weight card.

"You are dynamic, a leader of men, attractive to women, strong of character and in all ways a true gentleman. Hmm, it's got your weight wrong, too."

The Old Timer slipped and fell on an icy sidewalk. Immediately a crowd gathered around, all trying to help and each with a different suggestion.

One neighbor, Bridget O'Toole, kept saying: "Give the poor man a drink of whiskey," but little attention was paid to her amidst the babble.

Finally the Old Timer raised his voice above the din and exclaimed, "Will the rest of you shut up and listen to Bridget O'Toole!"

A woman motorist was driving along an isolated country road when she noticed several repairmen climbing a telephone pole.

"You men make me mad," she shouted at her startled husband, "I know my driving isn't that bad."

The only time most of us hear money talking is when it's doing a countdown before taking off.

False Alarms

A promotional exam for deputy chief not only covered the subject thoroughly, but had a blank space at the end.

Above the space the civil service examiner had inserted a note: "Please include here any good jokes you have heard lately. After grading this test I'll need a few laughs."

The senator was stumping a rural area seeking re-election. His long-winded speech had been going on and on, punctuated only by occasional brief stops for gulps of water. During one of these pauses, an old farmer in the audience turned to his neighbor and in a loud whisper observed: "First time in my life I ever saw a windmill run by water."

Aerial Driver: "Well, whaddaye know. I must of been out with one of them girls we just passed."

Lieutenant: "What makes you think so?"

Driver: "She looked straight at me and said, 'Boy, what a kisser'!"

Gummed Up

Kinkchaser's wife confided to a next-door neighbor that she'd finally cured her husband of biting his nails.

"Good gracious," said the neighbor, "how'd you do it?"

"It was really simple," was the reply. "I just hid his teeth."

When Eddie, the slow moving and inefficient clerk in a village store, was not on hand one morning a customer asked, "Where's Eddie? He ain't sick is he?"

"Nope, he ain't," replied the proprietor. "He just ain't working here no more."

"That so?" responded the villager, "Got anybody in mind for the vacancy?"

"Nope, Eddie didn't leave no vacancy."

"How often do you say no to temptation?"

"Once, weakly."

The most expensive item in a bachelor's budget is a young lady who is free for the evening.

Conversation

"Gee, Mabel, how did you get such a black eye?"

"My husband, the brute, gave it to me."

"I thought your husband was out of town this week."

"So did I!"

"What is your son in college going to be?"

"Either a Casanova or an auto mechanic. I got a letter from him today and he says he has a knack for tinkering with a miss in a motor."

She: "Look at the alligator shoes that my husband bought for me."

Her: "Lovely! It is hard to believe such beautiful things come from such an ugly beast."

She: "Yeah, but he's good to me."

Notice on a community bulletin board: "Ten-year-old boy will shovel snow and clean walks to help support a dependent who eats like a horse. P.S. It is a horse."

Judge: "Well, now, how did the trouble start?"

Plug Wrench: "It's like this, your honor, she asked me to play around and I didn't know she was a golfer."

Money in Figures

"Why did you quit teaching school to join the chorus?"

"Well, I think there's more money in showing figures to the older boys."

"You boys did such an excellent job on the fire I haven't a thing to offer in the way of post mortem critique—so how about filling in with a locker inspection."

Trainees using Rockwood Double Strength FOAM liquid learn one of the most effective fire-fighting techniques ever developed. Training cost is low because 3 gallons of FOAM provide 1,000 gallons of extinguisher.

Training men with Rockwood FOAM costs you least, saves you most

Rockwood Double Strength FOAM liquid gives you more efficient fire protection at lower cost than any other fire extinguishing agent. By mixing only 3 gallons of FOAM liquid with 97 gallons of water and 900 gallons of air you get 1,000 gallons of a powerful fire-fighting mixture — *the cost of which, per gallon, is only three tenths of 1% of the cost of FOAM.*

Double Strength FOAM liquid helps you improve and economize your departmental training too. The very small proportion required to produce this extinguishing agent permits training under actual fire conditions at negligible cost.

For further facts on Rockwood Double Strength FOAM, tested and listed by Underwriters' Laboratories, Inc., send coupon today.

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A Division of The Gamewell Company

Engineers Water... to Cut Fire Losses

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Please send me your illustrated booklet on Rockwood fire-fighting products.

Name _____

Title _____

Company _____

Street _____

City _____ *Zone* ___ *State* _____

Move in close, and stay there...
in heat reflecting gear

How close can you get to a fire—and hold your position? You can approach with conventional clothing, but in seconds your coat is smoking, and you must retreat. But now, protected by "Scotch• Shield" Aluminized Fabric that reflects 90% of radiant heat, you can move in closer than ever before, hold your position safely, and comfortably as long as necessary to control the fire! And it's ideal protection for top laddermen who can't retreat from flashbacks. Flexible, lightweight, "Scotch•Shield" Fabric garments that let you move freely and act quickly anywhere around the fire are used by hundreds of departments. This fabric is one of history's most important advances in protection for firemen. On the opposite page there is detailed information about this fabric.

SCOTCH·SHIELD
BRAND
ALUMINIZED FABRIC

the round table

discussion of current fire department and fire management problems

Who Is Responsible for Fire Prevention Inspections?

THIS IS THE FINAL installment of the Round Table on conducting fire prevention inspection programs.

Readers are invited to submit comments on next month's subject, as well as on the current one. Address replies to Round Table Editor, FIRE ENGINEERING, 466 Lexington Avenue, New York 17, N. Y.

The Discussion

V. A. Parker, Chief, Cumberland, Md.: In our department, one assistant chief is in charge of fire prevention inspections. He is assisted by a full-time inspector who works five days.

The assistant chief supervises inspection personnel at all times.

Inspections are carried out by the fire prevention bureau, other than when the captains of the four stations are assigned to inspections in their own district.

All inspectors are uniformed firemen.

Francis Doherty, Chief, Kansas City, Kansas: The assistant chief, who is assigned as chief of the fire prevention bureau, is responsible for fire prevention inspections and supervises inspection personnel.

Inspections are carried out solely by the fire prevention bureau.

Nine men, plus the chief of the bureau, are assigned fire prevention duties. All are experienced firemen with 10 years of fire fighting or more and all are assigned full time to fire prevention.

Robert H. Dickerson, Chief, Austin, Tex.: The fire marshal in our department has direct responsibility for fire prevention inspections. This person also supervises personnel at all times.

Inspections are carried out solely by the fire prevention bureau and all inspectors are uniformed.

Ivo Borg, Chief, Logan, Utah: The fire chief is responsible for fire prevention inspections and supervises personnel.

Each member of the fire department is assigned a district to inspect.

All inspectors are uniformed firemen.

George David, Chief, New York, N. Y.: Deputy Assistant Chief of Department Thomas J. Hartnett is in charge of all fire prevention activities.

Supervision is delegated by him to subordinates through chief officers, captains and lieutenants in all fire fighting units and in fire prevention district offices for inspection by uniformed members; and through the chief inspector, deputy chief inspectors and supervising inspectors for civilian inspections.

Inspections are carried out by every uniformed member of the fire department on a regular assignment basis and while performing fire duty. At the time of inspection, the fire apparatus is ready for response to any alarm. In addition, uniformed members work out of 14 fire prevention district offices which are located throughout the city. They concentrate on inspections of combustibles. Also, civilian inspectors work out of the main fire prevention offices.

All inspectors are not uniformed firemen. There are, in addition, civilian inspectors who hold chemical and civil engineering titles; also, blasting inspectors, whose background experience is with the use and handling of explosives, and electrical inspectors qualified for their jobs by reason of previous experience as electricians.

William L. Miller, Chief, Los Angeles, Calif.: Under the jurisdiction of the chief, the fire marshal is responsible for acting on all matters of fire prevention law and policy for the entire department.

Under the jurisdiction of the fire marshal, the senior fire prevention engineer has direct supervision of all fire prevention bureau inspections. However, all matters relating to fire prevention at the company level are under the direct supervision of the line officers concerned.

THIS MONTH'S QUESTIONS

What person in your department has direct responsibility for fire prevention programs?

Does this person have direct supervision of inspection personnel at all times? If not, state manner of supervision.

Are inspections carried out solely by the fire prevention bureau or comparable office? If not, how are they conducted?

Are all inspectors uniformed men? If not, briefly state type of personnel filling positions.

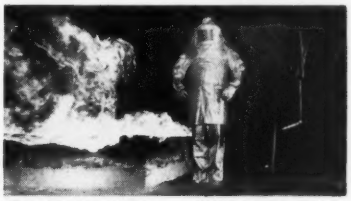
How much—what type of Reflective clothing does a department need?

Many airport departments have equipped their entire force with "Scotch·Shield" Fabric garments. However, two suits are providing basic "starter" protection for other departments. Approach and proximity jobs can be performed with reflective hoods, bunker coats and pants, and gloves—rescue jobs with complete "entry" suits.

What is

SCOTCH·SHIELD BRAND ALUMINIZED FABRIC

It's a fabric made of pure aluminum vapor-coated on lightweight rayon, asbestos, or glass cloth. Its bright aluminum finish reflects 90% of radiant heat. "Scotch·Shield" Fabric is extremely flexible and resists stress or tearing, won't peel or crack. Durability far exceeds other fabrics given equal heat exposure. It produces reflective-protective garments lighter than conventional bunker clothing—it eliminates the need for bulky insulation type gear. Return the coupon for literature describing "Scotch·Shield" Fabric and its uses in firefighting.



Try this heat test . . . within seconds the conventional bunker coat smoldered . . . "Scotch·Shield" Fabric garment protected for the duration of the 100 gallon spill fire!

Where can you buy

SCOTCH·SHIELD BRAND ALUMINIZED FABRIC

Garments made from "Scotch·Shield" Fabric are available through your regular fire equipment suppliers. Or you can secure the name of fabricators by checking the box in the coupon below.

Minnesota Mining and Manufacturing Company
Dept. RBX-30, St. Paul 6, Minn

☐ Please send me additional information on "Scotch·Shield" Aluminized Fabric.

☐ Please send names of firms manufacturing "Scotch·Shield" Fabric garments.

Name_____

Title_____

Fire Dept. or Firm_____

Address_____

City_____ Zone____ State_____

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW
ST. PAUL 6, MINNESOTA

Fire prevention inspections are divided between the fire prevention bureau and the fire suppression forces. The bureau occupancies are designated, based on size, complexity and conditions adversely affecting company response. The company is assigned all other occupancies.

All inspectors are uniformed firemen.

Al Boulton, Chief Fire Inspector, Peoria, Ill.: In our department, the chief of the fire prevention bureau is responsible for fire prevention inspections and supervises personnel.

The fire inspection bureau sets up all inspections; this includes company inspections with two-way radios.

John H. Wade, Chief, Belleville, Ill.: The assistant chief has full responsibility for all fire prevention inspections and has direct supervision of all inspection personnel.

Inspections of commercial buildings and factories are made by in-service companies, which are under the supervision of the assistant chief.

All inspections are made by uniformed firemen.

Edward J. Spolnick, Chief, Hammond, Ind. The chief inspector in charge of the bureau of fire prevention has direct responsibility for fire prevention programs. He has the rank of battalion chief. One captain and four privates are also permanently assigned to the bureau. In addition, the chief may assign other personnel from the fire fighting force.

All inspections, whether residential, mercantile or commercial, are carried out solely by the bureau of fire prevention, except during the time of each year when the home fire inspection program is in progress. Then, each company inspects the homes located in its own territory. This is also done under the supervision of the chief inspector.

The bureau of fire prevention has the sole responsibility for year-round inspections, and all inspectors are uniformed men.

Peter Kuhn, Erie, Pa.: The fire inspector chief has direct responsibility for fire prevention inspections and supervises inspection personnel at all times.

Inspections are carried out solely by the fire prevention bureau and all inspectors are uniformed firemen.

E. L. Smith, Chief, Eugene, Ore.: In our department the fire marshal is responsible for fire prevention inspections and supervises personnel.

The fire prevention bureau solely carries out inspections.

All inspectors are uniformed firemen.

Edgar A. Sherry, Chief, Richmond, Va.: The battalion chief has direct responsibility for fire prevention inspections. He supervises inspection personnel.

Inspections are carried out by the fire prevention bureau. However, the companies do home inspections.

All inspectors are uniformed firemen, with special training in this field. □□

NEXT MONTH'S QUESTIONS

Does your department personnel roster provide for extra men to be used to maintain company strength at a certain level under all foreseeable conditions? If so, what are your general company manpower levels?

In case of illness to individuals, are the temporarily vacant positions filled by extra men?

Are provisions made for filling temporarily vacant positions during vacations?

How are company officers substituted for during illness, injury or vacation periods?

In the event of serious manpower depletion by illness or injury, do department regulations require that normally off-duty personnel work extra time?

HANNAY REELS ARE BUILT FOR ACTION

Hannay reels give you instant action in fighting the countless fires where the booster hose is needed first. And when the out bell sounds, dependable Hannay chain drive gives you positive, controlled rewind even under the most adverse conditions. Only firefighters can know the demands made on every piece of their equipment, and Hannay reels are designed and built by working firefighters. Be sure you specify and insist on hose reels by Hannay.

Hose Reels by HANNAY

CLIFFORD B. HANNAY & SON, INC., WESTERLO 10, N. Y.

What's Burning

THE FOLLOWING LIST includes fires of $10,000 and over in the United States and Canada for the period from January 20th to February 20th.

Rogersville, Ala. — Rogersville Elementary School destroyed.
Russellville, Ala.—Trapptown Jr. High School destroyed. Defective flue.
Selma, Ala.—Miller Lumber Co. destroyed.
Anchorage, Alaska—Hangar and two planes at Drill Field destroyed.
Ketchikan, Alaska—Ketchikan Cold Storage and five business blocks destroyed.
Crossett, Ark.—Building housing Estell's Machine Shop, Gill's Cafe, Geraldine's Flower Shop, Obie Stover's Barber Shop and Morgan's Record Shop, destroyed.
Dumas, Ark.—Dumas Hosiery Mill damaged.
El Dorado, Ark.—Reynolds-Draper sawmill considerably damaged.
Forrest City, Ark.—Montgomery Building, housing 11 office firms, damaged.
Hot Springs, Ark.—Stevens Inc. Auto Supplies destroyed.
Waldron, Ark.—Scott Theater heavily damaged.
Malibu, Calif.—Dwelling of Robert S. Woodward destroyed.
San Francisco, Calif.—Moore Mfg. Co. damaged.
Saratoga, Calif.—Beckham & Joslin Auto Agency garage and service station and Corinthian Studios Antique Shop damaged. Spark ignited leaking gasoline.
Darien, Conn.—Twin Terrace Restaurant destroyed.
Fairfield, Conn.—Country Club of Fairfield damaged.
Groton, Conn.—Barge loaded with chemical wastes and dock at Charles Pfizer & Co. plant, damaged.
Litchfield, Conn.—William Colgate College at Connecticut Junior Republic, boys' institution, heavily damaged.
New Canaan, Conn.—Building housing Lang's Pharmacy, Ingold's Beauty Shop, Langbein's Gift Shop, Gristede Bros. Liquor Store and offices, damaged.
Oakdale, Conn.—Bonville Bros. Trucking Co. garage and four tractors damaged.
Stamford, Conn. — Business building, housing restaurant, bake shop, hairdressers' school and insurance agency offices, damaged.
Watertown, Conn.—Building housing George's Supermarket, photographer, Dee's Beauty Shop, Smitty's Sign Shop and several offices, destroyed.
Dagsboro, Del. — Chicken house and 8,500 chickens on Wilson Campbell farm destroyed.
Washington, D. C.—Juvenile Sales Co. toy store destroyed.
Palmetto, Fla.—Harlle Packing House, 11 adjacent dwellings and five refrigerator freight cars, destroyed.
Quincy, Fla.—Florida Cigar Co. plant destroyed.
Atlanta, Ga. — Building housing supermarket, barber shop and apartments, badly damaged.
Chamblee, Ga. — LoxCreen Co. metal plant heavily damaged.
Gainesville, Ga.—First Baptist Church sanctuary destroyed. Arson suspected.
Gainesville, Ga. — North Georgia Hatchery plant destroyed.
Salmon, Idaho—Mountain Rose General Store destroyed.
Wallace, Idaho — Bangart Apartments, office building and Oxford Cafe, destroyed.
Alton, Ill. — Knights of Columbus Club destroyed; club's adjoining building damaged.
Aurora, Ill.—Annex to Marmion Academy Tailor Shop damaged. Faulty heating system.
Belleville, Ill.—Quality Cleaners & Furriers, Inc. plant damaged.
Blue Island, Ill.—Lyric Theater building, housing several offices and adjoining buildings, damaged.
Carlinville, Ill.—Hudson Hall on Blackburn College campus badly damaged.
Decatur, Ill.—Barn and silo on Ralph Tate farm destroyed.

Please turn page

The "FOUR-MOST" Equipment

for Modern Fire Fighting and Rescue Work

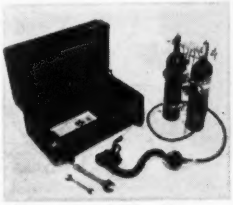
AIR-PAK **INHALATOR**

HYDRO-PAK **SCOTTORAMIC MASK**

Scott

Modern Fire Fighting means fire attack. It calls for a fast entrance to fight fires at their source. The Scott Air-Pak can be donned in seconds to get men in fast—with complete breathing safety, to reduce fire losses and increase efficiency of rescue work. Model illustrated provides a minimum of 30 minutes of protection at extreme exertion.

The Scottoramic Mask provides unlimited vision in all directions. Helps wearer keep out of danger zones. Makes rescue work safer and surer. Replace your old face pieces now with the modern Scottoramic.



Modern Fire Fighting includes, too — trained personnel and equipment to render first aid to the rescued. A Scott Oxygen Inhalator will help keep smoke and accident victims alive until the ambulance arrives.

A modern Fire Service must also include water rescue work and underwater search. The Scott Hydro-Pak has a full face mask for wide-area underwater vision. It is the world's finest and safest underwater breathing equipment.

SINCE 1932

Scott **AVIATION CORPORATION**

215 ERIE STREET, LANCASTER, NEW YORK

Export: Southern Oxygen Co., 250 West 57th Street, New York 19, N.Y.

Canada: Safety Supply Co., Toronto — Branches in Principal Cities

SCOTT AVIATION CORPORATION • 215 Erie Street, Lancaster, New York

Please send me the following literature and prices:

☐ Scott Air-Pak Brochure, 2-color, 6-pages.
☐ Scottoramic Mask Sheet 2-color.
☐ Scott Demand Inhalator Brochure. 2-color, 6-pages.
☐ Scott Hydro-Pak. 8 pages, profusely illustrated.

NAME _____ TITLE _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

Latham, Ill.—Carl Rager Grain Elevator destroyed.
Peoria, Ill.—Sweeney Gasoline & Oil Co. storage area damaged. Fire set by two boys.
Skokie, Ill.—Northwest Molded Products Corp. damaged. Explosions.
Springfield, Ill.—Vacant Skyline Super Market destroyed. Vandals suspected.
Stewardson, Ill.—Moomaw Mill and trailer truck destroyed, Falk Produce building, Masonic Hall and Stewardson Hardware, damaged.
Advance, Ind.—Breiner Co. damaged.
LaGrange, Ind.—LaGrange County Jail and dwelling of Sheriff Myron A. Walker destroyed.
Pekin, Ind.—Ralph Callam's Bargain Center and barber shop of Peret J. Hurst destroyed; six other buildings, including Campbell's Grocery and Click's Grill, damaged.
Ames, Iowa—Farm house fraternity building near Iowa State University campus damaged.
Cedar Rapids, Iowa—Fifty-year-old Elks Club building severely damaged.
Oelwein, Iowa—Main car shop of Great Westery Railway destroyed.
Perry, Iowa — Building housing Sam's Place restaurant destroyed.
Wichita, Kans. — Missouri Pacific Railroad roundhouse and three diesels destroyed.
Buffalo, Ky.—Lane Sales and Service plant destroyed; adjacent dwelling of Miss Willye Ree Crawford damaged.
Owensboro, Ky.—Huff's Standard Oil Service Station damaged. Explosion.
Murray, Ky.—A & P Supermarket, Sears, Roebuck Store, dry cleaners and offices of State Senator George Overbey, damaged.
Shelbyville, Ky.—Begley Drug Store destroyed; Chatham Shipp Clinic damaged.
Corinna, Me.—Fred Ray Potato Co. and Lionel Warner potato house destroyed.
Baltimore, Md.—Six dwellings from 903 to 913 North Broadway heavily damaged. Children with waxed paper near gas range.
Baltimore, Md. — Stadium Pharmacy heavily damaged.
College Park, Md.—Music building on University of Maryland campus damaged.
Girdletree, Md.—Charles S. Pilchard barrel factory destroyed.
Havre De Grace, Md.—Fifteen-building Havre de Grace Fireworks Co. severely damaged.
Salisbury, Md.—Calloway Shirt plant destroyed.
Silver Spring, Md. — Three-story apartment dwelling, under construction, destroyed.
Boston, Mass.—Business block, housing Wilson Shoe Co., Hudson Clothing, Kresge's Dept. Store and Lerner Shops, damaged.
Brighton, Mass. — Business-apartment building damaged.
Easthampton, Mass.—Philipp Mfg. Co. metal door plant damaged.
Gloucester, Mass. — Out-O-Gloucester Enterprises, Inc., boatyard and two fishing yachts destroyed.
Haverhill, Mass. — Atwood Apartments, also housing Valling's Beauty Supply Co., Inc., damaged.
Hyannis, Mass.—Planing mill of Huckley Lumber Co. damaged.
Natick, Mass. — Building housing Furniture Mart and apartment of John Werrick destroyed.
Peabody, Mass.—Henry leather factory heavily damaged.
Revere, Mass.—Business block, housing A & P Market, Babe's Cleaners, Pete's Barber Shop, Wolfson's Drug Store, Beachmont 5¢ and $1 Store and Beachmont Liquor Store, damaged.
Roxbury, Mass.—Freedom House Civic Center destroyed.
Salem, Mass.—Kausel Furniture showroom damaged.
Southbridge, Mass.—Bousquet's Auto Parts Inc. supply house damaged.
Westfield, Mass.—Nu Showboat Inc., night spot and cafe destroyed.
Bay City, Mich. — Dow Chemical Co. cracking tower damaged. Hole burned in catalyst tank on tower.
Oxford, Mich.—Pontiac Hide Co. plant damaged.
Saginaw, Mich.—Wagoner's Brake & Muffler Service garage and Murphy & O'Hara Furniture Co. warehouse destroyed. Sparks from acetylene cutting torch.
South Haven, Mich.—Holly's Restaurant and Cocktail Lounge damaged.
Ittna Bay, Miss.—Dormitory at Mississippi Vocational College for Negroes destroyed.
Mooreville, Miss.—Mooreville High School destroyed.
Defiance, Mo.—Dwelling of Daniel Boone, tourist attraction, damaged.
Kansas City, Mo.—Former Peters Serum Laboratories building and New Victoria Hotel severely damaged.
Paris, Mo.—Seventy-five-year-old Paris Opera House building, now owned by Orschein Bros. Truck Line, Inc., housing ice cream parlor, laundry and warehouse, destroyed.
Hinsdale, Mont.—Great Northern Railway depot destroyed.
Libby, Mont. — First Methodist Church destroyed.
Missoula, Mont.—Rother Lumber Co. planer mill destroyed.
Omaha, Nebr.—Darling Transfer Co. garage damaged.
Omaha, Nebr.—Herzberg's Department Store badly damaged.
Concord, N. H.—Army & Navy Store destroyed; pizza restaurant, Salvation Army Thrift Store, Merrill's Sign Shop and Citadel, damaged.
Dover, N. H. — American Cleaners and Dye House damaged. Suspicious origin.
Dover, N. H.—Dry cleaning firm, luncheonette and apartments in building opposite City Hall, damaged.
Andover, N. J.—Tennant Chemical Co. damaged.
Asbury Park, N. J.—Four two-story buildings, housing Regent Bakery, dress shop, uniform store and jewelry store, damaged.
Camden, N. J.—Gorfield Public School badly damaged.
Clifton, N. J.—Business block, housing Velveray Co.; The Zink Co., auto accessories firm; Bartman & Bixer, curtain mfrs.; adjacent tavern destroyed; dwelling of John Shraga and two other dwellings damaged.
Collingswood, N. J.—Lehigh Poultry Market, adjoining dress shop, Chinese laundry and two other stores considerably damaged.

More and more, emergency rescue service is recognized as an essential function of the fire department. Even if this important equipment is not yet part of your plans, it is forward thinking to be prepared with the facts on your own local requirements... to know what this additional life-saving equipment would cost... to know what items and features are most needed to perform an effective service in your community. Why not get the facts now? There is absolutely no obligation.

FOR A WELL-PLANNED, MORE EFFICIENT RESCUE UNIT...CALL GERSTENSLAGER

START YOUR PLANNING... GET YOUR COPY NOW!

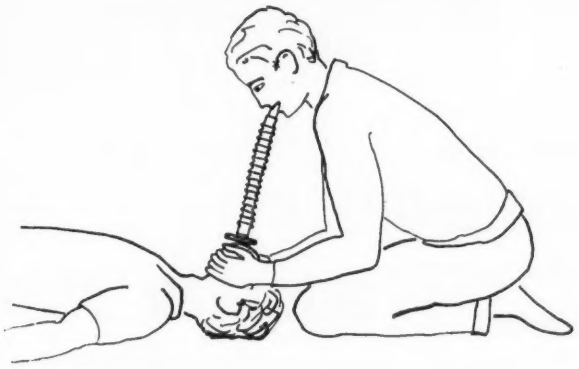
New brochure contains a check list of the most needed equipment carried by fire-rescue vehicles. Also illustrates and describes a wide variety of body styles and sizes. Really helpful in starting your planning.

CUSTOM BODIES SINCE 1860

THE GERSTENSLAGER COMPANY, 1425 EAST BOWMAN, WOOSTER, OHIO

East Paterson, N. J.—Tru-Built Home Products Inc. destroyed.
Fair Lawn, N. J.—Radburn Elementary School considerably damaged. Vandals.
Franklin, N. J.—Franklin Elementary and High School badly damaged.
Glassboro, N. J.—Delsea Sales and Auction Mart destroyed. Explosions.
Jersey City, N. J.—Factory building, housing New York Folding Box Co. and Roart Co., lamp and shade manufacturers, destroyed.
Lodi, N. J.—Two buildings housing four stores and apartments, damaged.
Newark, N. J.—Building housing Baby-Needs Service, Inc., and Elkay Distributors, severely damaged.
Newark, N. J.—Diamond Alkali Co. chemical plant severely damaged. Explosion.
Paterson, N. J. — Building housing Freetex Weaving Co., Wearever Silk Mills, Inc., J & R Tool Co., and Miller Machinery Co., damaged. Snapped electric cord sparked dust and lint.
Paulsboro, N. J.—Dixon Chemical Industries storage building destroyed. Sulphuric acid tank exploded.
Roswell, N. M.—Three Air Force jet tankers, hangar and parked cars at Walker Air Force Base destroyed. Plane out of control plunged into hangar.
Albany, N. Y.—Four-story building at 90½ Hudson Avenue damaged.
Bayville, L. I., N. Y.—Dwelling of late Frederick Benham destroyed. Electric heater.
Buffalo, N. Y.—R. J. Spangelthal Furniture warehouse, also housing Rosenace Printing Co. and Century Wholesale Co., damaged.
Carlisle, N. Y.—Town of Carlisle storage barn and garage destroyed.
Ellenville, N. Y.—Ellenville Lumber Co. destroyed.
Hempstead, L. I., N. Y.—Two Air Force storage buildings on Mitchel Field destroyed.
Huntington, L. I., N. Y.—Building housing Veteran's Administration, secretarial school and stores destroyed; adjoining building, housing children's furniture store, damaged.
Peekskill, N. Y. — Building housing discount store, New York State Employment Office and other offices, badly damaged.
Roslyn Harbor, L. I., N. Y.—North Shore mansion of Dr. Wendell L. Hughes, destroyed.
Seaford, L. I., N. Y.—Four stores and apartments at 3921 to 3927 Merrick Rd. considerably damaged.
South Yonkers, N. Y.—Old Westchester County Sewage Disposal Plant considerably damaged. Explosion.
Brevard, N. C.—A & P Supermarket destroyed.
Charlotte, N. C.—Jenkins Mfg. Co. millwork plant destroyed.
Cherryville, N. C.—First Baptist Church destroyed.
Durham, N. C. — Phillips Furniture Co. destroyed. Oil burner exploded.
Enfield, N. C.—Farmer's Supply Co. grain processing plant destroyed. Electrical defect.
Fort Bragg, N. C.—Army Engineer warehouse destroyed.
Franklin, N. C.—Auto Parts & Equipment Co. destroyed.
Gastonia, N. C.—Lincoln Academy building destroyed.
Hendersonville, N. C.—Patterson's Men's Shop, adjoining Good Friends Shop and Kalin's Department Store, damaged.
Kannapolis, N. C.—B & W Supply Co. destroyed.
New Bern, N. C.—Building housing Ace Electric Co. destroyed.
Roper, N. C.—J. J. Clemons High School, converted to elementary school, destroyed.
Townsville, N. C.—Dwelling of A. H. Moore destroyed.
Wilmington, N. C.—Kingoff's Jewelry Store damaged.
Wilson, N. C.—Acme Candy Co. considerably damaged.
Wilson, N. C.—Darden High School badly damaged. Arson.
Donnybrook, N. D.—Elevator and two adjacent grain bins destroyed.
Minot, N. D.—Five buildings housing Grand Hotel, Triangle Dress Store, P. W. Miller Hardware Store, barber shop and appliance store, destroyed.
Verona, N. D.—Three of five old school buildings destroyed; another damaged.
Cleveland, Ohio—Rosesheer Apartments, Imperial Chair Co., Goldenfeld's Tuxedo Rental

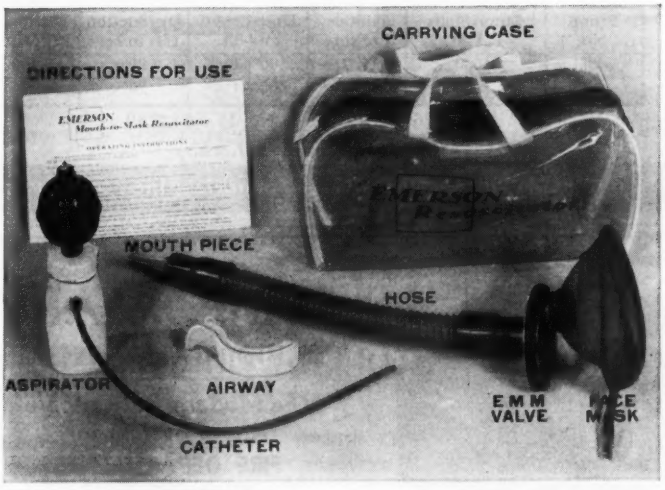
EMERSON Mouth-to-Mask Resuscitator



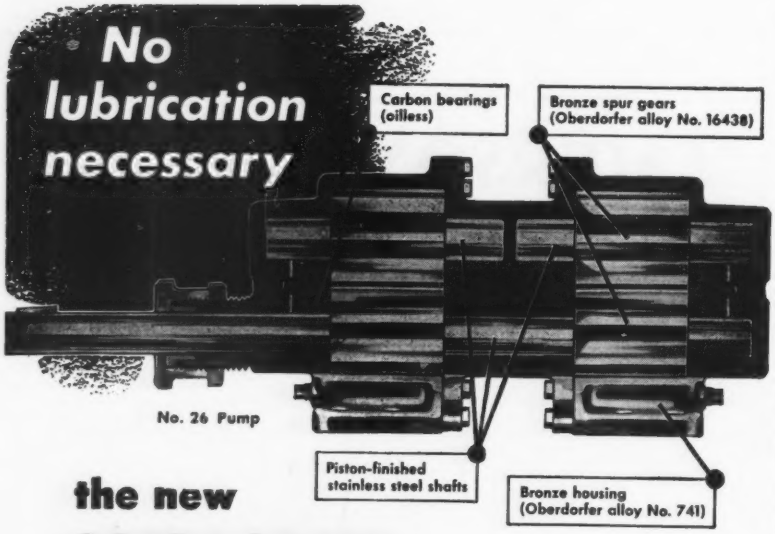
A small auxiliary unit for every piece of apparatus

Everybody has heard of mouth-to-mouth rescue breathing, but few people want to do it (except in selected cases). The small mouth-to-mask unit eliminates personal contact and increases efficiency, because the mask covers both the nose and mouth. The rescuer is in a better position, and the valve protects him against infectious material from the victim's mouth.

Compact and inexpensive.



J. H. EMERSON CO.
CAMBRIDGE 40, MASSACHUSETTS, U. S. A.


No lubrication necessary
Carbon bearings (oilless)
Bronze spur gears (Oberdorfer alloy No. 16438)
No. 26 Pump
Piston-finished stainless steel shafts
Bronze housing (Oberdorfer alloy No. 741)

the new

OBERDORFER BRONZE BOOSTER PUMPS

These booster pumps with oilless bearings will last 3 to 5 times longer than the old style equipped with plain bronze bearings. As a result of closer machining tolerances, over 20 feet of suction lift may be depended on.

The No. 13 and No. 26 Oberdorfer Pumps are more fool-proof than they have ever been. When you get to a fire you have something you can count on. It isn't necessary to wear pumps out checking them periodically to see if they will work. These pumps are metering pumps in principle and therefore must produce the same volume for every revolution of the drive shaft.

PERFORMANCE DATA—No. 26 and No. 13 PUMPS

Pump No.	Pump Shaft R.P.M.	Pounds Pressure	Hose Length and Size	Dry Suction Lift in Feet	Vol. in Gal. Per Minute
26	1600	120	500'—1½"	20'	150
13	1600	120	500'—1½"	20'	75

LIST PRICES — No. 26 — $249.50 No. 13 — $122.50

Slightly higher west of Rockies

FIRE PUMP DIVISION, Oberdorfer Foundries, Inc., Syracuse, N. Y.

The

"HOME ALARM"

RADIO ALARM SYSTEM

The Modern Dependable Alarm System for

FIRE DEPARTMENTS
— CIVIL DEFENSE —
EMERGENCY SERVICE

Write for descriptive literature
Dealer Territories available

ELECTRONIC DIVISION
HOBBY ENTERPRISES, INC.
17 Second Ave., Bayshore, N. Y.

and unoccupied drug store, damaged. Children with matches.

Fostoria, Ohio—Wood County Packing Corp. destroyed.

Lebanon, Ohio—Continental Oil Co. oil well on Mrs. Helen Sellers farm damaged. Drilled gas pocket exploded.

Oklahoma City, Okla.—Safeway Supermarket heavily damaged.

Pryor, Okla.—Cherokee Drug Store destroyed; adjoining Wallis Men's Store, Pryor Hotel and Allred Theater, damaged.

Albany, Ore.—Oregon Metallurgical Corp. damaged.

Baker, Ore.—Baker Bowling Alleys destroyed.

Eugene, Ore.—Sarchet Music Co. damaged.

Gold Beach, Ore.—Evans Products sawmill destroyed. Burner sparks.

Heppner, Ore.—Heppner Hotel damaged.

Hillsboro, Ore.—Products Research Laboratory damaged.

Hood River, Ore.—Lakin Apartments damaged. Faulty furnace.

Moro, Ore.—Gray Garage destroyed.

Portland, Ore.—McBreen's Truck Delivery damaged. Arson by bombing.

Portland, Ore.—Union Oil Service Station and adjoining garage destroyed. Explosion.

Portland, Ore.—Wymore Trucking Co. warehouse destroyed. Arson.

Springfield, Ore.—Dwelling of Earl Lentz destroyed.

Darby, Pa.—Keystone Ave. warehouse, housing Federal Government surplus food, heavily damaged.

Dubois, Pa.—Smyers Planing Mill damaged.

Foxburg, Pa.—Odd Fellows Home destroyed.

Gettysburg, Pa. — Adams House Apartment dwelling damaged.

Jermyn, Pa.—Jermyn Dress Mfg. Corp. destroyed.

Lancaster, Pa.—Cecil H. Neff's barn destroyed.

Milford, Pa. — One-hundred-and-fifty-year-old Chrissman Hotel, vacant, except for bar, destroyed.

Philadelphia, Pa.—Almo Sales Co. plant destroyed.

Philadelphia, Pa.—Chemical warehouse, housing Clarkson Laboratories Inc. and Manufacturing Chemical Co., destroyed.

Philadelphia, Pa.—Friend's Cleaners and Dyers damaged. Explosions.

Philadelphia, Pa. — Goodwill Industries, Inc., warehouse destroyed.

Philadelphia, Pa. — Imhof's Restaurant and Cocktail Lounge heavily damaged. Spark in air duct.

Philadelphia, Pa.—Norristown Trolley Terminal damaged.

Philadelphia, Pa. — Polsky Decorative Fabrics Co. destroyed.

Philadelphia, Pa.—Posternack's Furniture Store and warehouse and ajoining apartment dwelling, heavily damaged.

Philadelphia, Pa.—Venus Storm Window Co. destroyed.

Pittsburgh, Pa.—Gateway Center Building No. 4 damaged.

Pittsburgh, Pa.—Treasure Island Shopping Center destroyed.

Plymouth, Pa.—Brown Bros. Machine Shop destroyed. Faulty oil space heater.

Quakertown, Pa.—Quakertown Friends' Market heavily damaged.

Waynesburg, Pa.—Two buildings, housing Joe's Dairy Bar, William Limley's men's clothing firm, tailor shop of Clarence Knisley, Albert Knappes' auto repair shop, Sandra Ozonich's beauty shop and apartments, damaged.

Foster, R. I.—Rose's Restaurant destroyed.

Warren, R. I.—John D. Peck Grain Co. badly damaged.

Woonsocket, R. I.—Building housing Lefrancois Waste Paper Co. heavily damaged.

Columbia, S. C.—Olympia Mills plant extensively damaged. Faulty electric switch box.

Greenwood, S. C.—Panola Plant of Abney Mills damaged. Electrical short.

Westminster, S. C.—Oconee Mills cotton warehouse, branch of Beacon Blanket Mills, heavily damaged.

Jackson, Tenn.—Ritzy Restaurant destroyed.

Memphis, Tenn.—Demuth Furniture Co. destroyed.

Memphis, Tenn.—Memphis Housecleaning Co. plant destroyed.

Nashville, Tenn.—Private nursery heavily damaged.

Dallas, Tex.—Key Transfer & Storage warehouse damaged.

Dallas, Tex. — Lakewood Methodist Church sanctuary damaged.
Fort Worth, Tex.—Two-story apartment dwelling of Mrs. A. S. Johnson destroyed; three other dwellings damaged.
Houston, Tex. — Eastern States Petroleum & Chemical Corp. plant damaged.
Royse City, Tex.—Five business buildings, housing tailor shop, cafe, Cookston Hotel, and Davis Mfg. Co. dress plant destroyed or damaged.
Salt Lake City, Utah—Sterling H. Nelson & Sons Co. warehouse damaged.
Alexandria, Va.—Five buildings, housing taxicab office, consignment shop and three dwellings heavily damaged.
Charlottesville, Va. — Crutchfield's Colonial House Furniture Store heavily damaged.
Gloucester, Va.—Midlothian, colonial dwelling of W. E. Moorman, Jr., destroyed. Kerosene heater exploded.
Martinsville, Va.—Combination filling station-fuel distributing center of Sprinkle Oil Co. heavily damaged. Auto knocked over gas pump.
Mechanicsville, Va.—Risge View, dwelling of Joseph A. Weinstein, destroyed.
Clarkston, Wash.—J. B. Lumber Co. destroyed.
Harrah, Wash.—Patnode Market and apartments damaged.
Hinton, W. Va.—Dwelling of Magee Garten destroyed.
Keystone, W. Va.—Drugstore of Dr. P. G. Howard, Joe Cabara's restaurant and apartments damaged.
Amery, Wis.—Building housing five stores, an apartment, a law office and insurance office, damaged.
Cambridge, Wis.—Building housing living quarters at Thompson State Prison Farm destroyed.
Milwaukee, Wis.—Building housing wholesale house, night club, tavern, loan office, and photo engraving company damaged.
Milwaukee, Wis.—Pharmacy, food market, and apartments damaged.
Milwaukee, Wis.—Half a block of business establishments and apartments badly damaged. Electrical short in an ice cream making machine.
Rhinelander, Wis.—Warehouse and garage of Red Dot Foods Inc., potato chip plant, damaged.
Ailsa Craig, Ont.—Alex Stewart & Sons feed-grain mill damaged.
Englehart, Ont.—William Pollock & Sons sawmill destroyed.
Kitchener, Ont. — Richardson's Shoe Store, Steeles' Optometrist, Meher's Shoe Store, Queen's Restaurant, McLen's Fish Market and apartments, destroyed.
Port Colborne, Ont.—Star House Hotel destroyed; several adjoining buildings damaged.
Prescott, Ont.—Three-story waterfront building, housing Prescott Armory, damaged.
Disraeli, Que.—Wolfe Pants Regd. factory destroyed.
Hull, Que.—Several downtown buildings, including LaFlamme Drug Store, damaged.
Montreal, Que.—Dieppe Movie Theater severely damaged.
Montreal, Que.—Newly completed but unoccupied Clover Dale apartments, badly damaged.
Quebec City, Que.—Historic Quebec Seminary severely damaged. □□

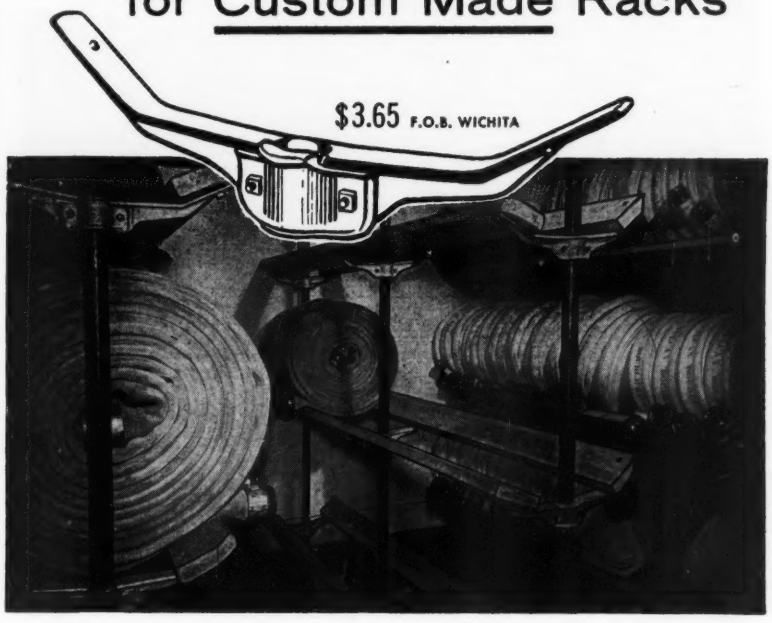
New York City Taxicabs Plug Fire Prevention

Fire Commissioner Edward F. Cavanagh, Jr., has enlisted the aid of the 12,000 taxicabs in New York City in the department's fire prevention educational program. The taxicab owners agreed to have the cabs carry stickers for three months starting February 1.

There are two stickers. The warning on one reads: "Three (3) out of five (5) fires are caused by a careless cigarette or a careless match." The warning on the other is: "Never leave a child alone, or near matches. It means fire and tragedy."

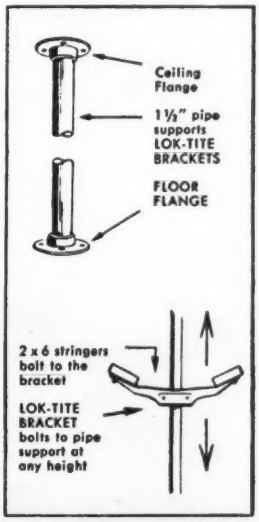
Hose **BRACKETS**
for Custom Made Racks

$3.65 F.O.B. WICHITA



Convert Waste Space To Valuable Storage!

Lok-Tite fire hose brackets provide storage racks in odd dimension areas where ready-made storage will not fit. Encourage good housekeeping practices . . . assure easy hose inspection and correct ventilation by building sturdy storage with Lok-Tite brackets approved by hose manufacturers and fire departments everywhere.

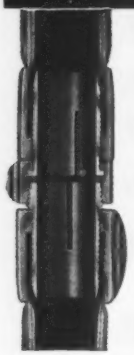

Ceiling Flange
1½" pipe supports LOK-TITE BRACKETS
FLOOR FLANGE
2 x 6 stringers bolt to the bracket
LOK-TITE BRACKET bolts to pipe support at any height

W-B MANUFACTURING COMPANY
157 N. WACO • WICHITA, KANSAS

W. B. MANUFACTURING CO. Dept. FE
157 North Waco • Wichita, Kansas
Please send me ____ brackets @ $3.65.
NAME_____
STREET_____
CITY_____ STATE_____

- Simple to install
- Easy to adjust
- Big load support

A new high-pressure coupling by BAR-WAY for all types of fabric hose



Patented

1. FULL FLOW—no significant reduction of internal diameter. Pressure is assured.
2. STREAMLINED—round-edged design, no projection.
3. INTERNAL EXPANSION—prevents shrinkage of the hose at the coupling.
4. ACCURATELY MACHINED—always the same . . . interchangeable.
5. REMOUNTABLE—can be removed and re-attached with a key any number of times without cost.
6. WEIGHT—no heavier than comparable expansion type coupling.

Successfully Tested To Bursting Point Of Double Jacket, Single Jacket And Sweat Hose

Recognizing the trend toward higher and higher pressures in fire fighting, Bar-Way has developed a revolutionary coupling that will withstand the pressure and the pull. This new coupling is designed to fire fighting specifications. It guarantees full flow, full pressure, it is streamlined to slip over obstructions, and it can be interchanged anywhere at any time without damage to either the tube or fabric. Specify Bar-Way! Write Bar-Way Mfg. Co., Stamford, Conn.

TESTED for 1400 lbs. pressure and 2400 lbs. pull under full pressure.

BAR-WAY MFG. CO., STAMFORD, CONN.

Write for Bulletin 6600-F

MORE EFFECTIVE FIRE PROTECTION

CITY • RURAL • FOREST

MODEL 6600 PUMPER—Instantly Self-Priming—No waiting when seconds count
HIGH PRESSURE—Use one or two hard-hitting streams or fire-blanketing fog-spray
LIGHT WEIGHT—Easily carried to source of water or fire area
NEOPRENE IMPELLERS—Pump dirty water as well as clean water—assure long life
POWER—Efficient 4-cycle, air-cooled 5 HP engine known and serviced world-wide
BY-PASS VALVE, SPRING LOADED GREASE CUP, NO LOSS OF PRIME, PLUS MANY OTHER FEATURES

UP TO 40 GPM AT 150 PSI

WEIGHS ONLY 110 LBS.

MARINE PRODUCTS COMPANY
515 LYCASTE AVENUE • DETROIT 14, MICHIGAN

HOME FIRE SAFETY

Continued from page 219

and believe there is a fire in your house, the safe way to test is to place both hands at the top of the bedroom door. If there is a fire outside, the heat will penetrate through the door top and you will be able to feel it with your hands.

14. If you should still be in doubt never open the door in any manner other than is shown here. Place one hand at the top of the door, one hand on the door knob, one foot against the door and then just crack the door open. If there is a fire, the superheated air will cause pressure that will push the door hard enough to knock down an unsuspecting person. Firemen have found many bodies that this has happened to.

15. Each person should know how to remove screens and storm windows. The new kinds of windows and accessories are built so that it sometimes takes a master mechanic to remove them.

16. Show your children the method of breaking a window with a chair if there is no other way out. It is both safe and effective.

17. Many homes have bedroom windows leading to a porch roof. If this is the case in your home, don't hesitate to instruct your family to get out onto the roof and wait until the fire department arrives.

18. Instruct your family, especially the children, how to get out of the windows. Many persons are afraid of height. If you sit them on the window sill and tell them to jump, they'd rather burn to death than leap.

19. However, if they are trained to shinny out on their stomachs, and hold onto the window ledge with their fingers, the length of their body is subtracted from the distance of the fall and their fear of height will be partly relieved. They may suffer broken ankles, but they will not panic and lose their lives.

20. Keep a ladder in your garage. Don't hesitate to ask a person outside the house to help in case of fire and instruct him to use your ladder to allow you and your family safe exit from the house.

21. Never belittle the practice of keeping a rope in your bedroom. Many salesmen who stay in small hotels in little towns still carry rope and many lives have been saved by rope. It does not have to be kept in a conspicous place but can be put in a closet or dresser drawer.

22. Here is a slide of two stories that appeared in the same newspaper on the same day. Note that three lives

were lost. This type of story appears so frequently that neither of these articles even rated the front page.

23. This is a story about a fire in which a woman saved her life by (a) closing a door and (b) staying in the room until the fire department helped her escape.

24. What would happen if a fire should occur in your home? Would the story read like the first two articles, or the third?

The slides and narrative have received an excellent reception and with so many groups promoting the same idea, there will be a great combined effort in Ohio to save lives in homes during 1960. It is hoped the idea will interest other states to undertake similar programs in the future. □□

CRASH FIRE FIGHTING

Continued from page 222

is less chance of a flashback from the hot metal. It cannot be used successfully if there is a strong wind blowing nor can it be used safely in a confined space if the user does not have breathing protection, and it would be of no avail to make a good stop on a fire only to remove occupants who are dead of asphyxiation. Extensive use of CO_2 may also impair vision during operations.

CBM, or chlorobromomethane vaporizing liquid is being used by the Air Force, and to a lesser degree by others. This material is an improvement over carbon tetrachloride, but has certain disadvantages. It is expensive and has toxic properties against which protection must be provided such as contact with the skin and breathing of its vapors.

Dry powder which is compatible with mechanical foam has recently been developed. This material can be used before, during and after the application of mechanical foam and does not seem to interfere with or destroy the foam blanket.

Inspection

Fire hazards, points of entry, etc., can only be generalized, due to the fact that they are different in almost every make, model and type of aircraft. It is possible with the aid of charts and firsthand inspections to become familiar with individual aircraft. If inspections can be arranged with the proper authorities, it is much better to follow a definite procedure rather than a haphazard stroll through the plane. Have a guide who is thor-

103½" W.B. Heavy Duty Chassis with 8 Ply Tires—8000# G.V.W. Rating—105 H.P. Engine—Full Cab—500 G.P.M. Mid-Ship Pump Class "A"—200 Gal. Booster Tank and Reel—150'-1" hose—hose bed capacity 1000' of 2½"—Ladders, Axe and Pike Pole—Compartment 20" x 20" x 60"—Complete Fire Equipment as pictured—2 lengths of 4" suction hose—write for complete specifications and prices.

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ROEBLING VOLUNTEER FIRE CO. No. 3
SEVENTH AND KNICKERBOCKER AVENUES
ROEBLING, NEW JERSEY

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January 8, 1960

For over a year we have owned a FC170 Jeep fire truck, manufactured by the Valley Fire Truck Co. We are especially proud of this apparatus. It has saved us considerable manhours and manpower. We have knocked down and put out many brush fires with little effort and only using the driver of the vehicle and a man handling the booster hose while the vehicle was in motion.

I wish to cite an instance when our truck was called out of our district to combat a field fire where at least 10 other companies were called for assistance. Being a windy day the fire raced across dry grass and cornfields uncontrolled. Manpower was utilized with indian tanks as this was the only means of getting to the fire. With the fire heading towards a farm dwelling and barn, our JEEP took thru the fields, knocked down the fire which was approaching the dwelling and barn and then proceeded to extinguish the rest of the field fire.

The versatility of this truck, makes it easy to operate and it can solve many pesky problems for an organized fire department.

ROEBLING VOLUNTEER FIRE CO. #3

Theodore Mitre

Theodore Mitre, Chief

A Fire Fighting Truck that will do everything that a large one can, and go places and fill the need that others CANNOT. Powered by the famous Super Hurricane, 6 cylinder, 105 H.P. engine. 6¾ ft. wide and 20 ft. long.
Off the road fire fighting, no other can follow the Willys Champion Fire Truck. You can pump with truck in motion.
Suited for Villages, Cities, Townships, as well as Industrial and Commercial Fire Protection.
Available with four stage high pressure centrifugal pump for delivery of 60 gpm at 1000 psi.

VALLEY FIRE TRUCK COMPANY
59 Tuscola Rd. Phone TW 5-5601 Bay City, Michigan

oughly familiar with the aircraft and don't hesitate to ask pertinent questions.

The following inspection plan may be followed: Before starting an inspection, study the aircraft chart so that you will know what to look for. Start by getting an over-all picture of the plane, be able to recognize it by noting distinguishing features. Remember, if you see it again in an emergency, it may not look quite the same.

While still outside, note the normal and forcible entry points and find out how to operate them. Inside the aircraft, compartments and normal crew and passenger locations should be observed. In the event a forced landing is anticipated, the personnel aboard may take emergency stations other than their normal seating.

The locations of fuel, oil, hydraulic fluid, alcohol, oxygen, magnesium, pyrotechnics, and armament should be noted. The engine shutdown procedure may be learned in the pilot's or engineer's compartment, together with the location of the proper switches.

If this procedure is followed, a good over-all picture may be had. The cooperation that may be expected from airport officials is very good, and from a public relations standpoint, these people are usually pleased that something is being done to protect their aircraft and personnel.

Tactics

Upon arrival at the scene of a crash, many things must be immediately sized up, such as wind direction and velocity, the terrain, the explosives and hazards, and the strategy of attack planned. It is good to keep in mind a route of retreat. The apparatus should be spotted upwind of the fire and convenient so that the attack may be made either on the nose or the tail of the aircraft. If the ground is uneven, the "spot" should be on the uphill side so that burning fuel won't flow under the truck. Keep the apparatus out of the line of rockets and gunfire, and out of the way of operations.

The first two hose lines should be "spotted" on each side of the fuselage and utilized to keep the inhabited portion of the fuselage cool. The next lines should start making a rescue path along the side of the fuselage. Remember, all attacks should be either from the the nose or tail, depending upon wind, terrain, availability, etc. These lines should remain in place until after the rescue has been accomplished. All additional lines should be used to extinguish the fire from the fuselage outward, or to protect immediate hazards or explosions, depending upon the situation. After rescue has been made, all lines should concentrate on complete extinguishment.

Crashes into buildings or vehicles present a great variety of problems. Due to the circumstances, they may be treated as aircraft crash fires or as building fires, or any combination of the two. A good knowledge of both types of fire fighting will be a great asset to the fireman handling these combination fires.

If, upon arrival at a crash, no fire is apparent, don't take chances. The proper positions should be taken and all lines should be fully charged. Fire may break out long after the crash occurs, due to gasoline coming in contact with hot engine parts, arcing of electrical equipment in gas fumes, static electricity, explosion of pyrotechnics, or for many other reasons. One spark could put the whole area in flames in a matter of seconds. Remember, human beings are the most valuable and the least fire-resistant objects aboard, or surrounding the aircraft.

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No part of the airplane should be moved unless it is essential for rescue or fire fighting operations. Movement of an aircraft may rupture fuel lines, cause sparks from friction, short-circuit wires, etc., thus creating additional hazards. There will probably be an extensive investigation into the cause of the crash by the CAA, the CAB, or military authorities. One moved switch could make the difference in whether or not the cause of the crash is found. All fire fighters should try and make mental notes of the original crash setup and any changes such as moved parts, cut-off switches, etc., should be brought to the attention of the investigators.

If an airfield crash crew arrives on the scene, let them take charge. The fire department can assist and work with them. These men are highly trained in all phases of crash fire fighting and their equipment is designed for that purpose.

Always make sure the proper authorities are notified as soon as possible. A high degree of security should be maintained, especially around military aircraft. Highly secret equipment may be encountered, and it is your duty not to make any mention of this, even to family and friends. Make sure the area of the crash is roped off and let no unauthorized persons or souvenir hunters in.

Crash fire fighting is a highly specialized field and its fundamentals cannot be learned hastily. Don't put this aside with the thought "it can't happen here." The records speak for themselves. It has happened and it can happen. Study it, discuss it, and by all means, be ready for it.

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U. S. Navy Aircraft Fire Fighting and Rescue Manual, NAVAER 00-80R-14 □□

Montana Chiefs to Meet

The Silver Bow Fire Council at Butte, Mont., has been selected as host for the fourth annual conference of the Montana State Fire Chiefs' Association to be held at the Racetrack Volunteer Fire Department June 9-11. Everett Munroe, chief of the Dutton Fire Department, is president of the association.

W. S. Hayes

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FACTORY FIRE

Continued from page 215

five companies from Paterson under Acting Chief Bray and one from Garfield. Passaic activated its civil defense auxiliary firemen to man one spare pumper and one CD pumper for protection of the community. A second CD pumper was dispatched to Clifton to join West Paterson and Little Falls companies which stood by.

Ambulances from Nutley, Garfield, Lodi, Rutherford and East Rutherford rushed to the scene to assist Clifton and Passaic squads care for the injured and transport them to the hospital. Passaic General Hospital activated its disaster plan and all doctors and nurses were recalled to duty. Three units of the Clifton-Passaic Red Cross went to the scene and two units of the Salvation Army set up mobile canteens for the now weary firemen. The latter remained on duty for four days.

Linemen of the Public Service Co. soon cut off all electricity and gas lines in the area to eliminate further hazard from these sources while public works department employees of both communities helped clear rubble impeding operations and police held back the crowd attracted to the scene.

The fire was considered under control by 4:30 p.m., but all Clifton and Passaic units and one Paterson engine pumped for approximately 40 hours. Six streams continued to wet down the smouldering debris as late as Saturday.

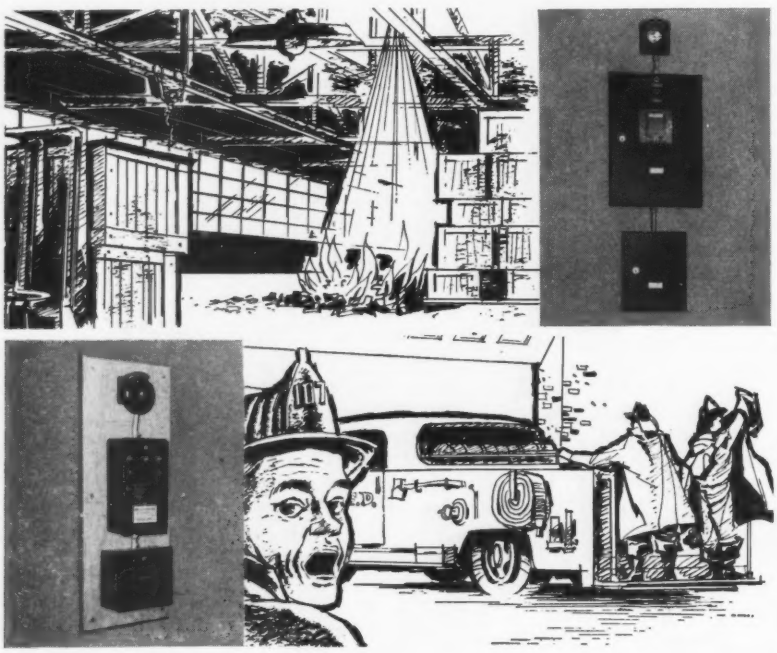
Clifton and Passaic began relieving the men on the fire lines with civil defense auxiliary firemen at 9:00 a.m. Thursday after 24 hours continuous duty. During the long operation, the exposed fire fighters were hampered by high winds, rain and snow which continued for the rest of the week.

At this writing, the reports of various agencies investigating the fire have not been made public. However, Chief Killeen and Deputy Chief Louis Greenberg, Passaic Fire Prevention Bureau, told FIRE ENGINEERING that the original explosion appeared to them to be a smoke explosion or back draft. The minor explosions were most likely flammable liquids used in the manufacturing processes of at least one of the occupants. The major storage of these liquids was in basement vaults on the Passaic end of the building which were not involved in the fire. It was the practice of the companies to carry five-gallon cans of the liquids from the vaults to the job sites.

An alternate explanation was that the exposed steel beams expanded laterally with the heat and buckled. This could have been accompanied by a sharp report, after which the displaced walls tumbled down. One point which has not been cleared up was the inaction of the sprinkler system. According to unverified reports the control valves were shut off for a period of at least one-half hour before the wall collapse. After the fire was under control the valves were inspected and found to be open! It is also known that no pumper lines were connected to the two fire department siamese connections installed in the building system.

As soon as Passaic Public Safety Director Hymen Siegendorf learned of the destruction of the aerial, he asked the Newark Fire Department for loan of a spare to replace the five-year-old truck. A few days later the Passaic Board of Commissioners authorized replacement of the ladder truck as soon as possible. The Clifton ladder truck which had been damaged was driven to the factory for repairs.

In addition to the injuries and apparatus damage, the loss of employment is a hard blow to the communities. Tax losses due to destruction of ratables is estimated at $28,000 to Clifton and $18,000 to Passaic. The four firms employed 875 people. □□



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LUMBERYARD FIRE

Continued from page 217

and two watch lines were operated at hydrant pressure until 6 a.m. on the 10th.

The building was valued at $30,000, and the contents at $90,000. As it turned out, a quantity of paint was salvaged with the labels intact, as well as some building supplies, nails and lumber and plywood that can be used by sawing off the burned ends. The adjoining business buildings suffered some smoke damage, but no fire or water damage.

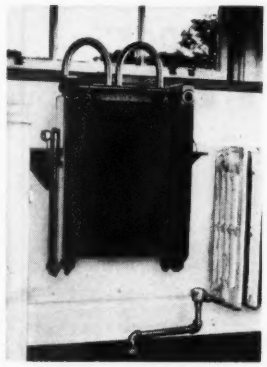
Firmen climb to roof of Kroger building to direct stream on fire. Main entrance to lumberyard was through large doors under "welcome" sign

Eldorado is a town of 4,500 persons, with a privately owned water company. It is believed quite an accomplishment to operate five 500-gpm pumpers for four hours and not run out of water. According to the manager of the water company, the firemen pumped in excess of 400,000 gallons of water. Standpipe pressure at the start was 60 pounds, and at the time the mutual aid equipment was sent home, it was 30 pounds.

While more than 50 men operated at the blaze, there were no injuries. The only untoward incident occurred when one section of the more than 4,500 feet of hose stretched on the streets burst. □□

Seattle May Buy Aerial Powered by Gas Turbine

Seattle may purchase a 100-foot aerial ladder truck powered with a gasoline turbine engine. The lowest of four recent bids for ladder trucks, $52,400 by American LaFrance, offered the turbine engine.



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The MARLAN EMERGENCY FIRE ESCAPE has been thoroughly tested in fire drills in Public Schools, and has received enthusiastic acceptance by School officials and all persons concerned with the safety of children. It provides a safe and efficient outside-the-building escape when usable corridors become smoke filled death traps.

These units require no maintenance, are easy to install, and are low in initial cost. Write TODAY for illustrated Brochure. An "On-The-Spot" demonstration can be arranged.

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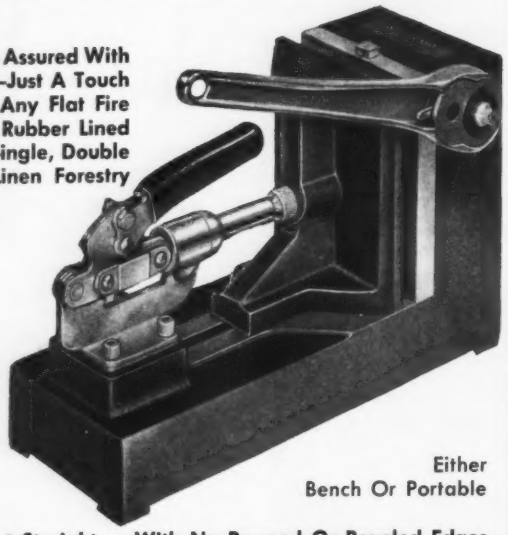

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SINCE 1836

Persons in the News

Fireman Heads Champion Olympic Hockey Team

Jack Kirrane, captain of the champion United States Olympic hockey team, is a member of the Brookline, Mass., Fire Department. Kirrane and his teammates won the Olympic hockey title and one of the three gold medals garnered by the United States, by defeating Czechoslovakia 9-4 after trailing 4-3 at the half in the decisive February 28 game.

A native of Brookline, Kirrane was captain of the hockey team in his senior year at Brookline High School, and All Scholastic for three years. He has been on two Olympic teams and one United States team which toured Europe in 1958.

Kirrane and three of his teammates from the Greater Boston area—Bill and Bob Cleary of Cambridge, and Dick Rodenhiser of Malden—were given a tumultuous welcome when their plane landed at Logan International Airport on February 29.

A motorcade which included several pieces of fire apparatus toured downtown Boston before heading for Brookline. As the procession entered Brookline, Kirrane took over his role as tillerman on Ladder 2 and rode up to the town hall in the tiller seat.

Among the officials who welcomed him was Fire Chief George Gettings of Brookline. Kirrane was appointed to the department on May 31, 1954.

As far as can be determined, this is the first time a fire fighter has ever led an Olympic team to a gold medal victory.

Gerald Ring Appointed Chief of Binghamton

Gerald Ring who served as acting fire chief of Binghamton, N. Y., since the resignation of the late Chief Frank J. Buckman in February 1959, was recently appointed fire chief by Mayor John J. Burns. Chief Ring is a veteran of 42 years in the Binghamton Fire Bureau.

Townsend Honored by New York Association

B. Richter Townsend, secretary, manager, International Association of Fire Chiefs, was recently named "Man of the Year" by the New York Fire District Officers Association. The group, composed of fire commissioners of towns and fire districts, singled out the I.A.F.C. official for his past efforts in developing the New York State mutual aid plan, the State fire training program, school fire safety inspection programs and a college-level fire administration program. The award also emphasized his work on a national level in relation to civil defense and his years of devotion to the cause of raising the standards and efficiency of paid and volunteer firemen. A beautifully illuminated parchment scroll was presented to him as a memento of the occasion.

President James H. Holmes, Fire District Officers Association, presents scroll to B. R. Townsend

Jay Stevens Honored On N.B.F.U. Retirement

About 300 of his northern California friends, including many Pacific Coast fire chiefs, honored Jay W. Stevens at a luncheon at the San Francisco Commercial Club on February 4. The testimonial marked Chief Stevens' retirement as assistant manager of the National Board of Fire Underwriters.

James F. Crafts, president of The Fund Insurance Companies was chairman of the luncheon. Among the speakers who lauded various facets of Chief Stevens' 60 years of activity in behalf of fire prevention were: Harry W. Miller, president, and Lewis A. Vincent, general manager, of the National Board of Fire Underwriters; Chief J. J. Sweeney, Jr., president, Pacific Coast Inter-Mountain Association of Fire Chiefs; L. Jack Block, past president, Lions Club of San Francisco, and Herman H. Spaeth, San Francisco Pond of Blue Goose.

Thousands of persons throughout the country who regard Mr. Stevens as "Mr. Fire Prevention" were unable to be at the testimonial. Many of them however, joined in the tribute by wire or letter. Vice President Richard Nixon wired that, "His outstanding record of service in the

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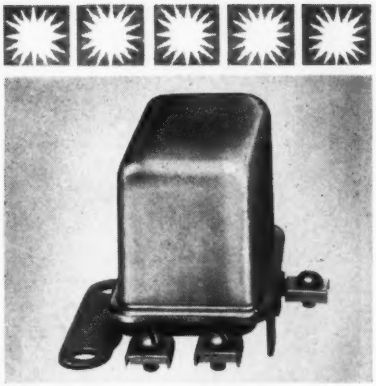

Kay-Lab heavy-duty Universal Flasher sounds warning horn and flashes up to sixteen 32-cp lamps, alternately right and left, up and down, front and back, or simultaneously, depending on hook-up. Lasts almost indefinitely.

Kay-Lab Universal is magnetically operated, costs only ½ the price of motor-driven flashers, gives longer, better service. No lubrication required, no upkeep or heavy drain on batteries. 6 and 12-volt models.

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This "Indian Chief" swings with full authority for breaking and entering; 2¼, 4½ and 6-lb. heads (full polished with red trim) on 36-inch white No. 1 hickory handle—precision inserted for safety.

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The "True American" Undercutter is needed for hidden fire, when paneling or floor boards must come up—FAST! Shaped for prying windows and doors. 4½ lb. head (black); 36-inch clear lacquered No. 1 hickory handle.

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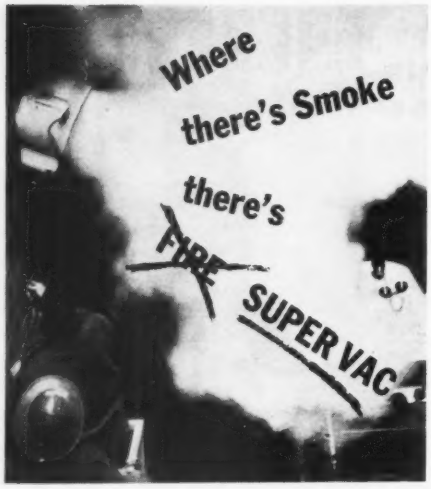

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- Unique patented perfect spiral air screw — does not *chop* air like ordinary fans.
- No dead spots — creates suction over *entire* face of housing.
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- Now four sizes — 12" - 16" - 20" - 24".
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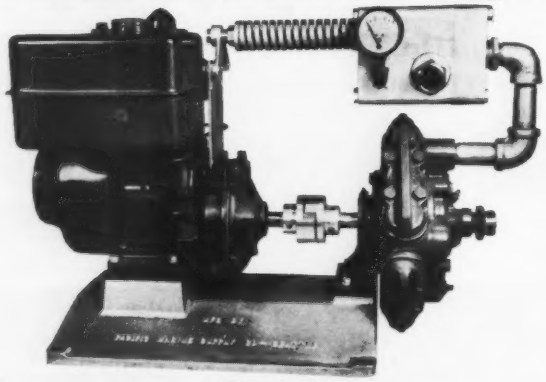

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field of fire prevention is most deserving of the tribute you will be giving him." Chief Justice Earl Warren, in a letter to Mr. Stevens, lauded his imagination and resourcefulness which was vital to the success of California's fire prevention program. "I will always be deeply grateful for your fine leadership during our association in state government and for our close friendship through the years," the Chief Justice wrote. Doctor Norman Vincent Peale also wired his congratulations and praised the ". . . outstanding service he has rendered through the years. Thousands have been instructed in fire prevention because of his foresight and determination. We are proud to be counted as one of his friends. May God bless him always." The Most Rev. Francis P. Leipzig, bishop of Baker, Ore., and chaplain, Pacific Coast Inter-Mountain Association of Fire Chiefs, also sent a telegram congratulating "Mr. Fire Prevention."

Mr. Stevens was presented with a scroll in tribute to his achievements and with a special savings account.

Chief Stevens will continue his close association with the fire service as director of fire prevention for the International Association of Fire Chiefs and as secretary-treasurer of the Pacific Coast Inter-Mountain Association of Fire Chiefs.

O'Donnell Named Chief Of Allentown, Pa.

Charles B. O'Donnell, a veteran of 19 years service with the Allentown, Pa., Fire Department, became fire chief on January 4. O'Donnell joined the department on August 1, 1940, and at one time was an inspector. Prior to his appointment as fire chief, he was driver at the newly established Fearless station. He served as assistant chief when Walter J. Flores, now retired, was chief.

Civic Group Honors McNamee

Philip Sterling, chairman of the Economics and Taxation Council of the Chamber of Commerce of Greater Philadelphia, left, presents citation to Fire

—Photo by Lt. Robert Kennedy

Commissioner Frank L. McNamee for his efficient and economical administration of the Philadelphia Fire Department. It was the Council's first award to a public official.

LOGISTICS

Continued from page 225

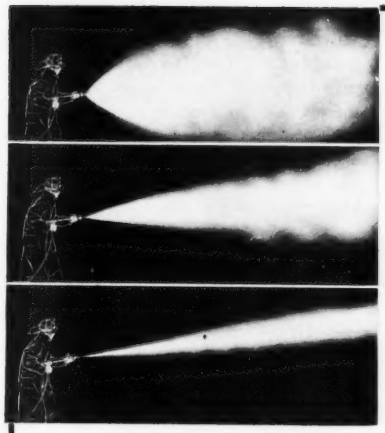
feeding is called for, the food preparation duty is transferred to the local forestry probation camp. Under this arrangement, any request for additional fire-line food is directed to the supply office, which contacts vendors and arranges for pickup and delivery, and notifies the camp of the estimated time of arrival of the supplies.

In the event fire suppression operations are to be prolonged, Plan II may be called for. This entails delivery from the Pacoima warehouse to a preselected site of a complete self-sufficient fire camp. This will include, in addition to facilities supplied under Plan I, extensive mess facilities under direction of a kitchen boss; a tool section, under a tool boss; a field headquarters trailer for communications—both radio and telephone; and a small house trailer for the operational chief and his assistants usually located off limits so that they can plan strategy without interruption. In addition, chemical toilets are contracted for and the current gasoline vendor is requested to furnish one or more fuel tankers with pumps. Bulldozers with operators are rented from approved vendors to augment the department's own force, and relief cooks and drivers are engaged and alerted for possible use in connection with mobile food dispensers. An additional 35-foot refrigerator trailer is ordered, one for each camp where required, and the suppliers must deliver the vehicles and retrieve them after the camp is dismantled.

And here again, logistics enters the plan. A typical first order upon establishment of a single fire camp may consist of something like this menu: Four beef hindquarters, 300 pounds of smoked ham, 200 pounds of sliced bacon, 100 pounds of cheese, 100 pounds of variety luncheon meat, 50 pounds of margarine, 180 dozen eggs, 250 pounds of pork loin, 400 pounds of potatoes, as well as celery, lettuce, tomatoes, dry onions, apples, oranges, grapes and other fruits in season. It may also include 300 loaves of bread, 80 dozen doughnuts and, in addition, supplies of canned milk, string beans, carrots, peas, fruit juices and, of course, coffee — the latter in 100-pound units. Another "must" provided by supply and transportation is unlimited cold milk for as long as it is needed.

Inventories invaluable

A most important factor in logistics is the projection of requirements. The supply office must know such details



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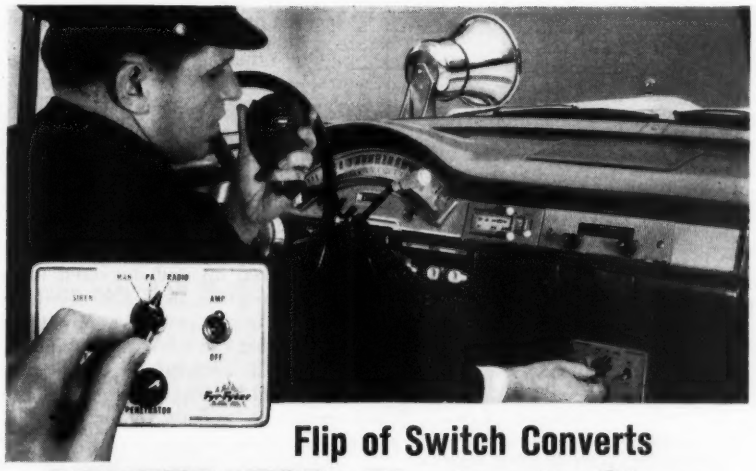

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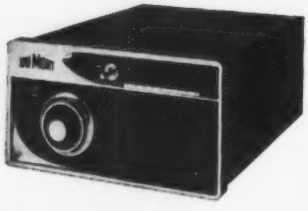

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as the approximate number of men involved in the action; the estimated number of meals to be served in a given period; how many reinforcements will be arriving, and when. In addition, he must have at his elbow a complete inventory record of available sources of supplies which must be kept current.

In addition, liaison must be established with all possible supply houses well in advance of emergency need. An accurate listing of the nonbusiness phones of vendors is maintained whereby delivery of urgently needed perishables may be obtained without undue delay. Many times the department has arranged for, and picked up 1,000 pounds of meat as well as vegetables, bread, milk, etc., at midnight.

Although the Los Angeles County Fire Department by law has the authority to commandeer supplies—even personnel—in time of major disasters, that authority has never been exercised. The long history of cooperation and reciprocity inaugurated by the department has caused vendors and suppliers to readily accommodate requests put through at any time, including Saturdays, Sundays and holidays. It is an unwritten rule that this close association of interests should never be abused.

Records and paper work

One other essential detail of logistics, measured by Plans I and II should be mentioned. That is the question of records and paper work. During a major fire, the supply office maintains a complete log containing such matters as the kind of supplies ordered, the time of order, vendors' names, amounts requested, time orders picked up and delivered to fire camps, and the like. All records are retained in one envelope and later, as invoices are received, verified and approved, a confirming requisition is forwarded to the County purchasing agent who prepares the orders. When these copies are received by the fire department, they are given priority and payment authorization is sent to the County auditor-controller. Prompt payment is a fetish.

It is obvious that in serious emergencies during the brush and forest fire season, minutes are precious and deliveries of essentials are needed in a hurry. Time cannot be taken to prepare formal, detailed requisitions, obtain approval from some higher authority and forward them to vendors for later action. Therefore, the department cuts every possible inch of red tape that might possibly hamstring the logistics of supply.

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A final observation by Chief Klinger is worth quoting. He said, "The idea has been advanced by some that the details of supply and demand can well be handled by normal county and/or municipal staffs not a part of, and generally not acquainted with modern fire departments, their needs and sources of supply. In other words, these essentials are purely routine matters well within the scope and systems of other branches of government. Personally, I do not believe so. I believe that those responsible for fire department logistics should be members of the department thoroughly familiar with its organizational functions, its requirements, responsibilities and limitations. Furthermore, the business systems employed should be tailored to meet the peculiar needs of the department itself." □□

The author gratefully acknowledges the assistance of Chief Keith E. Klinger; George Ashe, manager, business division, and Dolph Fursee, supply officer, Los Angeles County Fire Department, in the preparation of this article.

"Book Burning" Points Up Advantage of Sprinklers

In tests conducted by the Factory Mutual Research Corporation recently at Norwood, Mass., 14,000 books were burned. The "book burning" was an experiment by insurance men and librarians to find out, among other things, how quickly books packed closely in steel racks actually burn and to determine whether fire or water posed the greater relative danger to books.

In the past, many librarians have called water more harmful than fire. Insurance men, on the other hand, believe that sprinklers should be installed near book shelves. They are reluctant to continue to insure clients like the New York Public Library, whose shelves (without sprinklers) contain a Gutenberg Bible, insured for $500,000, and a draft of the Declaration of Independence by Thomas Jefferson, insured for $150,000.

To carry out the tests, the New York Public Library provided 20,000 books it considered damaged or worthless, and the Providence, R. I., Public Library delivered about 3,000 more. In the first of two fires, a huge book shelf was equipped with automatic sprinklers. The fire set by a workman continued for about four minutes; then the heat operated the sprinklers. The books were soaked, but the fire was soon out. In the second fire, without sprinklers, the shelves seemed completely ablaze within nine minutes. Then two firemen opened hose lines. The powerful streams knocked rows of books to the flooded floors. The fire was put out but, according to an observer, 80 per cent of the 14,000 books had been completely destroyed. He said that none of the books in the earlier demonstration had been irreparably damaged.

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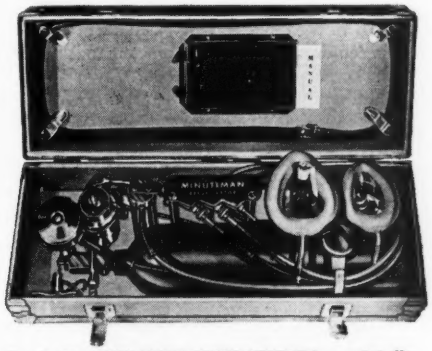

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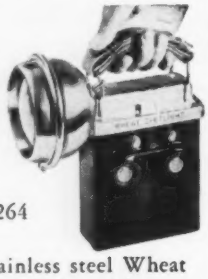

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Coming Events

Apr. 23-24—Fire Fighters Association of Missouri. Annual meeting, Kirksville, Mo. For information write: John L. Welsch, Secretary-Treasurer, 305 Forest, Harrisonville, Mo.

Apr. 27-30—Arizona State Firemen's Association. Annual meeting, Hermosillo, Sonora, Mexico.

May 5-7—Florida State Firemen's Association. Annual meeting, St. Petersburg Beach. For information, write, Victor J. Higgins, chairman, St. Petersburg Beach Fire Department, 420 76th Avenue, St. Petersburg Beach, Fla.

May 9-11—Southwestern Association of Fire Chiefs. Annual meeting, Houston, Tex. Secretary-Treasurer, Chief T. L. Townley, Jr., P. O. Box 334, Odessa, Tex.

May 15—Southern Wisconsin & Northern Illinois Firemen's Association. Annual meeting, Prairie Du Sac and Sauk City, Wis. Secretary, Herman Pfund, New Glarus, Wis.

May 16-20—National Fire Protection Association. Annual meeting, Montreal, Que. General Manager, Percy M. Bugbee, 60 Batterymarch Street, Boston 10, Mass.

May 26-28—California Fire Chiefs Association. Annual meeting, Santa Monica, Calif. For information write Chief C. N. Carrell, Fire Headquarters, Santa Monica.

June 2-4—Eastern Association of Fire Chiefs. Annual meeting, Ocean City, N. J. Secretary, Chief Edwin J. Clark, Box 328, Wayne, Pa.

June 3-4—Indiana Volunteer Firemen's Association. Annual meeting, Clinton. Secretary, Harry Fries, Rural Route 3, Walkerton, Ind.

June 9-11—Montana State Fire Chiefs Association. Annual meeting, Racetrack Volunteer Fire Department, Butte. Secretary, William S. Hayes, 208 Eklund Building, Great Falls, Mont.

June 10-11—Dauphin County Volunteer Fireman's Association. Annual meeting, Harrisburg, Pa. Sponsored by the Goodwill Fire Co. No. 7 and Reily Hose Co. No. 10. Secretary, D. Edgar Fox, 723 North 19th Street, Harrisburg, Pa.

June 15-18—Colorado State Firemen's Association. Annual meeting, Colorado Springs, Colo. Secretary, Arthur J. Becker, 2224 South Stuart Street, Denver 19, Colo.

June 16-18—Hudson Valley Volunteer Firemen's Association. Annual meeting, Monticello, New York. Secretary, Charles M. Fales, 92 Clove Avenue, Haverstraw, N. Y.

June 19-21—South Carolina State Firemen's Association. Annual meeting, Poinsette Hotel, Greenville, S. C. Secretary-Treasurer, David H. Gillam, Jr., Orangeburg, S. C.

June 19-22—Campus Safety Association. Annual meeting, Cornell University, Ithaca, N. Y. For information, write Daniel P. Webster, Staff Representative, Higher Education Section, National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill.

June 20-23—New England Association of Fire Chiefs. Annual meeting, Wentworth by the Sea, Portsmouth, N. H. Secretary-Treasurer, Chief Albert W. Kimball, 25 Leavitt Street, Hingham, Mass.

June 22-25—International Fire Buff Associates, Inc. Annual meeting, Chester, Pa. Secretary, Robert B. Wren, 3430 Saybrook Avenue, Cincinnati 8, Ohio.

Aug. 19-21—Connecticut State Firemen's Association. Annual convention and parade, New London, Conn. For information write the New London Firemen's Association, Convention Committee, Inc., P. O. Box 811, New London, Conn.

Aug. 25-27—Westchester County Volunteer Firemen's Association. Annual meeting, Os-

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sining, N. Y. For information contact William Johnson, Co-Chairman, Box 334, Ossining, N. Y.

Aug. 28-Sept. 3—International Association of Fire Fighters. Annual meeting, Buffalo, N. Y. Secretary-Treasurer, John C. Kabachus, AFL-CIO Building, 815 Sixteenth Street, N. W., Washington 6, D. C.

Sept. 12-15—International Association of Fire Chiefs. Annual meeting, Hotel Manger Seneca, Rochester, N. Y. Secretary-Manager, B. Richter Townsend, 232 Madison Avenue, New York 16, N. Y.

September 15—Delaware Fire Chiefs Association. Semiannual meeting, Bridgeville, Dela. Secretary, Howell H. Barnes, Smyrna, Dela.

Sept. 16-17—Delaware Volunteer Firemen's Association. Annual meeting, Bridgeville, Dela. Secretary, E. Reynolds Bradley, Smyrna, Dela.

Sept. 18-21—Pacific Coast Inter-Mountain Association of Fire Chiefs. Annual meeting, Las Vegas, Nev. Secretary-Treasurer, Jay W. Stevens, Merchants Exchange Building, San Francisco, Calif.

Sept. 19-22 — Canadian Association of Fire Chiefs. Annual meeting, Calgary, Alberta. Secretary-Treasurer, Chief Allan H. Clark, Fire Headquarters, Lakefield, Ont.

Sept. 19-22—International Municipal Signal Association. Annual meeting, New York, N. Y. Secretary, Irvin Shulsinger, 130 West 42nd Street, New York 36, N. Y.

Oct. 17-21—National Safety Congress. Annual meeting, Chicago, Ill. Further information may be obtained from R. L. Forney, secretary, National Safety Council, 425 North Michigan Avenue, Chicago 11, Ill.

Nov. 3-5—International Rescue and First Aid Association. Annual meeting, Benjamin Franklin Hotel, Philadelphia, Pa. For further information, contact the Executive Office, 314 King Street, Alexandria, Va. □□

FIRE COLLEGES

Arizona State Fire School—Oct. 20-22, Phoenix, Ariz. For information write Chief Jake Siken, Supervisor of Training, Phoenix Fire Department.

Colorado State Fire School—June 15-18, Colorado Springs, Colo. For further information write Arthur J. Becker, Secretary, Colorado State Firemen's Association, 2224 South Stuart Street, Denver 19, Colo.

Connecticut Fire Officers Conference—Apr. 5-7; **Fire Marshals Conference**—Apr. 19-21. Both conferences to be held at the University of Connecticut, Storrs. For information write Roy W. Adams, Director of Vocational Training Field Service, Connecticut State Department of Education, 490 Capitol Street, Hartford, Conn.

Connecticut State Fire College—June 6-10, New Haven Fire Department training ground. For information write Roy W. Adams, Director, Vocational Training Field Service, Connecticut State Department of Education, 490 Capitol Avenue, Hartford, Conn.

Delaware Volunteer Firemen's Fire School—May 7-8, May 14-15, Camden-Wyoming, Dela. Chairman Granville T. White, Laurel, Dela.

Florida State Fire College — Mar. 21-25, **Units 102,** Hose and Ladders; **202,** Company Officer Training; **206,** Fire Prevention and Protection. Mar. 28-Apr. 1, **Units 103,** Rescue, Ventilation, Salvage and Overhaul; **105,** Fire Apparatus and Pumps; **204,** Fire Fighting Tactics. Apr. 4-8, **Units 104,** Fire Streams; **107,** Arson Detection; **208,** Fire Department Administration. May 16-20, **Heating and Air Conditioning.** June 6-10, **Fire Pump Maintenance;** Aug. 8-12, **Semi-**

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Indiana Fire Training Program—Mar. 29-31, Industrial Fire Control Seminar; May 16-20, Basic Fire Course; May 24-25, Rescue Training Course; Sept. 14-17, Annual Indiana State Fire School; Oct. 25-27, Fire Inspectors Course. All courses will be held at Purdue University, Lafayette. For information, write Professor Shelby Gallien, Director, Public Safety Institute, Purdue University, Lafayette, Ind.

International Arson Investigators Seminar—Apr. 25-29, Purdue University, Lafayette, Ind. For information, write Professor Shelby Gallien, Director, Public Safety Institute, Purdue University, Lafayette, Ind.

Kentucky Fire School—Mar. 30-Apr. 1, Instructors' Training Conference; June 6-8, Annual Fire School. Both sessions will be held at the University of Kentucky, Lexington, Ky. For information, write J. L. Thompson, Chairman, Fire School Committee, 940 Starks Building, Louisville 2, Ky.

Monroe County Fire School—Sept. 17-18, Coolbaugh Township, Tobyhanna, Pa. For information contact James H. Oakey, Driector, Box 67, Tobyhanna, Pa.

Morris County, N. J., Fire School—April 5, Millbrook Fire Headquarters, Randolph Township. For information, write Robert H. Wright, Publicity Chairman, Long Hill Lane, Chatham, N. J.

Nebraska State Fire School—May 1-3, sponsored by the Nebraska State Volunteer Firemen's Association, and held at the Municipal Airport Grounds, Grand Island, Neb. For information contact Russell D. Salak, Secretary, Fire School Committee, P. O. Box 312, Schuyler, Neb.

Northeastern Pennsylvania Volunteer Firemen's School—June 4-5, Seeleyville, Pa. For information contact James H. Oakey, Director, Box 67, Tobyhanna, Pa.

Ontario Fire College—**Apr. 27-29, Fire Chiefs Conference,** to be held at University of Toronto; **May 2-6—FMO Staff Conference; May 9-13—FMO Staff Instructors Training Course; May 23-27, Radiological Monitoring Course; May 30-June 3, Temiskaming District Fire Course; June 6-24, Administration Course for Senior Officers; June 13-17, Oxford County Regional Fire School,** Woodstock; **June 20-24, Wellington County Regional Fire School; July 11-15, Basic Fire Inspection Practices Course; July 18-22, Sudbury District Regional Fire School,** Sudbury; **July 25-29, Pump Course; Aug. 8-12, Fire Department Instructors Course, Part I; Aug. 15-26, Fire Department Instructors' Course, Part II; Aug. 9-Sept. 2, Volunteer Fire Officers Course, Part I; Sept. 12-16, Eastern Ontario District Fire Course; Sept. 19-23, Pump Course; Sept. 26-Oct. 7, Company Officers' Course; Oct. 17-21, Basic Fire Inspection Practices Course; Oct. 24-28, Mutual Fire Aid Forum—County Fire Coordinators.** All courses will be held at the Ontario Fire College at Gravenhurst, Ont. For information, write W. J. Scott, Q.C., Fire Marshal, Province of Ontario, 210 Huron Street, Toronto 5.

Pennsylvania State Firemen's Training School—**Apr. 25-29, Pump School; May 2-5, Basic Fire Fighting; May 16-20, Ladders, Rescue, Salvage; May 23-27, Advanced Fire Fighting; June 6-10, Fire Department Pump School; June 20-24, Basic Fire Fighting;** June 27-**July 1, Ladders, Rescue, Salvage;** July 11-15,

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Advanced Fire Fighting; July 25-29, Fire Department Pump School; Aug. 1-5, Basic Fire Fighting; Aug. 15-19, 22nd Annual Pennsylvania State Fire School; Aug. 20, Instructors Conference; Aug. 22-26, Ladders, Rescue, Salvage; Aug. 29-Sept. 2, Advanced Fire Fighting; Sept. 12-16, Fire Department Pump School; Sept. 26-30, Basic Fire Fighting; Oct. 3-7, Advanced Fire Fighting; Oct. 17-21, Basic Fire Fighting; Oct. 31-Nov.4, Advanced Fire Fighting; Nov. 14-18, Fire Department Pump School. All courses to be held at the State Training School, Lewistown, Pa. For information contact Art Espey, Director, Box 631, Lewistown.

Southern Wisconsin and Northern Illinois Fire School—Sept. 11. For further information, write Herman Pfund, Secretary, Southern Wisconsin and Northern Illinois Firemen's Association, New Glarus, Wis.

Washington State Command School for Senior Fire Officers—Apr. 25-28, Yakima, Wash. For information, contact Chief W. K. Moore, Fire Headquarters, Yakima, Wash. □□

Reject Private Tugs For Fire Fighting

Fire Chief Ed Leavine of Tampa, Fla., and a majority of the councilmen of that city recently rejected the proposal of a councilman to put fire fighting equipment on private tugs in the harbor for waterfront fire protection.

Chief Leavine said the tugs were not built for the specialized work and expressed wariness at such an operation unless the fire department had 24-hour control of the facilities. He told councilmen that he and the city's purchasing agent were seeking to buy government surplus fireboats at a low cost to provide waterfront protection.

Obituaries

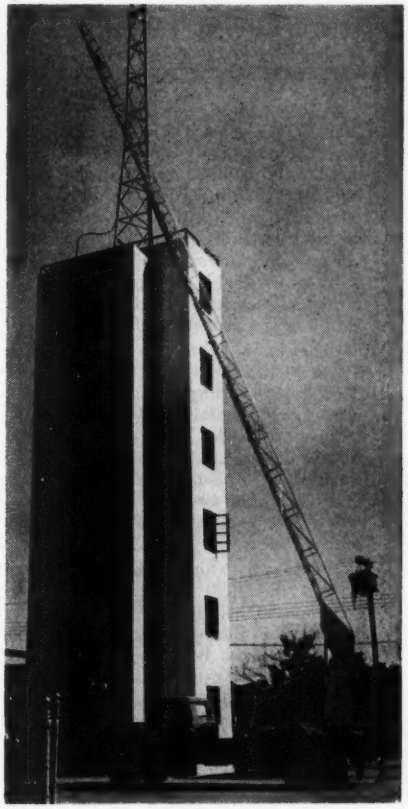
William Paul Babcock

Captain William Paul Babcock, 76, died February 4 at Point Pleasant, N. J., Hospital. A native of Nyack, N. Y., he was inspector of fire prevention in that community for many years. He was long active in educational efforts among volunteer firemen and conducted a salvage column in FIRE ENGINEERING for several years. He organized the Nyack Fire Patrol, said to be one of the first salvage companies in a volunteer fire department, and was a life member of the Nyack Community Ambulance Corps.

He established the Tappan Zee Surgical Co. over 50 years ago in Nyack and manufactured medical specialties. In recent years he moved the business and his residence to Bayville, N. J.

A. H. Benson

Retired Navy Fire Marshal A. H. Benson died February 10 at his home in Mountain Home, Ark. He had served as fire marshal of the Potomac River Naval Command for 13 years prior to his retirement in July 1959. □□



SPONCO AERIAL LADDER

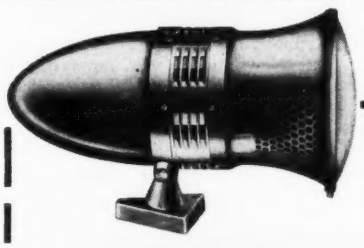
According to modern theory, the accepted way to fight a fire is by directing a stream of water *down* on the roof of a burning building through the use of an aerial ladder equipped with a ladder pipe. Note the photograph—see how the new, all-steel SPONCO AERIAL LADDER towers above the full five story McAlpine Drill Tower (Oklahoma City Fire Department) thus enabling a fireman to direct water *down* on to the roof in the accepted manner.

The SPONCO is an all-steel unit with all operations powered—raise and lower, fly extension and retraction, and turntable rotation. The mechanical refinements engineered into the SPONCO add greatly to the speed, smoothness and operational efficiency of the unit.

The SPONCO, a product of the Memco Aerial Ladder Company, being entirely new has been given the new name—derived from the name of our parent company — SPONHALTZ ENTERPRISES, INC.

Available in 50, 65 and 75 foot lengths, the new SPONCO AERIAL LADDER is priced within the reach of the smallest city needing an aerial. Your favorite fire truck manufacturer can build a SPONCO AERIAL into your new truck, or possibly incorporate one into a truck which you already have in service. Investigate TODAY—for details write or telephone.

MEMCO AERIAL LADDER CO.
1007 N. W. 36th Street
Oklahoma City, 18, Oklahoma



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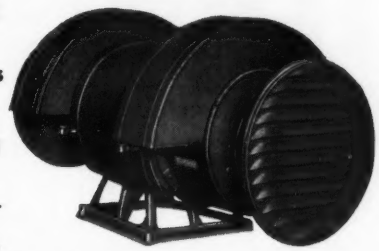

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Among the Buffs

By Paul C. Ditzel

FOR SOME REASON not immediately apparent, the genus "fire buff" seems to find his natural habitat more in the northern climes than in Dixie, with a few notable exceptions. Not the least of these exceptions is Buff Robert Sams of 944 Shades Glen Drive, Birmingham 9, Ala., who speaks highly of his city's department and mentions that the city has one of the new "Snorkel" units in its plans.

"They now have the '39 Seagrave Truck in the shops," reports Buff Sams, "and are converting it to a water tower. The monitor guns have already been stripped from the old water tower and placed on the truck. Think it will take them about a year to convert this truck and place it in service. The rig formerly was at No. 3 station and was replaced by a new 75-footer."

Bob says the word around Birmingham is that the 1920 water tower will be scrapped. "This rig has been out very few times in the past several years and a ladder pipe has been used on most big fires with a few exceptions."

Buff Sams also publishes a *Fire Buff's Newsletter* and indicates he'll be happy to build his mailing list if interested buffs care to send him their addresses. Bob, himself, is interested in fire photography, old catalogs of the major apparatus builders, copies of firemen's magazines, booklets, and other fire literature.

Among the items gleaned from his current Newsletter is the news that Buff George Wards, Jr., of 14 Rosewood Lane, Owings Mills, Md., and a firefan friend have acquired a 1913 American-LaFrance "pumping car." They intend to restore the rig to its original condition. George would welcome painting suggestions and photos of early rigs so he can authenticate his restoration.

Brer Sams also reports that this column's good friend, Stan Helberg, the intrepid Chicago firefan, is still standing by his fire alarm radio and taking in all the big ones. At this time of year Stan should be busy and we'd like to be able to report on Chicago news if he'd send it along to this column.

Reporting further on Birmingham, Firefan Sam says the city had a general alarmer which destroyed a clay products plant on the north side of the city. Damage was estimated at $4½ million. Bob reports he was able to shoot a number of good pictures of the blaze including a view of the old 1920 water tower in one of its rare appearances outside of quarters.

Executive Secretary George A. Melchin of 29 Prescott Street, Cambridge 39, Mass., reports the following were elected 1960 officers of the Boston Sparks Association, 112 Dartmouth Street, Boston: Charles W. Asbrand, president; Robert L. Fabian, vice president; Ralph S. Alden, treasurer; George A. Melchin, secretary; and board members: George A. Brickell,

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Choose from hundreds of designs in nickel, chromium, rhodium, sterling silver, gold plate, perma-glo, gold filled and 14 kt. gold. Complete satisfaction assured by one of America's oldest badge manufacturers. Send for current price list or complete catalog.

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PORTABLE ELECTRIC HAND LAMPS

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Popular price, light weight, easy to carry. Adjustable 5-inch head. Holds two standard 6-volt lantern batteries. Operates on one; other is a spare.

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William B. Tyler, George H. Russell, Richard P. Johnson, and William J. Sleep.

Another active buff, Henry G. Nathan of the 414 Association, Inc., Baltimore, reports that the Friendship Fire Association of Washington, D. C., was presented an International Fire Buff Associates, Inc., charter. The ceremony took place during an FFA meeting on January 19. Buff Nathan, a vice president of the IFBA, says there are now five IFBA member clubs in the Baltimore-Washington area. They hold joint meetings periodically.

I wish I knew—so I could thank in print—the anonymous sender of the January issue of "WNYF," that excellent publication of the New York Fire Department. While all issues of this magazine are prized by buffs, the January issue was an exceptionally valuable one. I was especially interested in "More About Lofts," an article by Battalion Chief Hugh J. Lynch of the FDNY Sixth Battalion. The well-illustrated article contained a number of "practical hints on fire fighting at company level."

While articles on fire department drill schools are not exactly unique to buff readers, "The Proby Story" in the same issue was exceptionally well done. The author was Lieutenant James F. Casey and the photos were taken by Hellriegel and Heffernan of the fire department photo unit. And then, of course, historically minded buffs found the article by our good friend, Clarence E. Meek, honorary deputy chief, of invaluable interest.

Until next month I hope you buffs—individuals or clubbers—continue to send your reports and feature anecdotes to me. The address: 4234 Don Diablo Drive, Los Angeles 8, Calif. □□

Ak-Sar-Ben Presents Rescue Truck to Omaha

The Knights of Ak-Sar-Ben, Nebraska service organization, recently presented a new rescue truck to the Omaha Fire Department. The unit is the seventh given to the city by the organization.

Fire Chief Eugene W. Fields reports that the truck was built to the department's specifications by the Gerstenslager Company, and describes it as the most modern type. The unit will carry seven persons in stretchers. The 20-year-old rescue unit replaced by the new vehicle will be converted to a floodlight unit.

January Fire Losses

Estimated fire losses in the United States during January amounted to $92,949,000, the National Board of Fire Underwriters has reported.

According to Louis A. Vincent, NBFU's general manager, this $92,949,000 loss represents a decrease of 17.7 per cent from losses of $112,983,000 reported for January 1959, and a decrease of 3.6 per cent from losses of $96,444,000 for last December.

These estimated losses include an allowance for uninsured and unreported losses.

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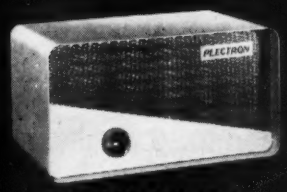

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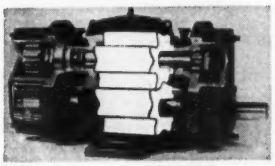

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FOR SALE

Sealed bids will be received by the Tuxedo-Cheverly Volunteer Fire Company, Inc. of Tuxedo, Maryland until 2:00 P.M. June 5th 1960 for the sale of one 1949 Mack fire truck with Hale 500 GPM pump and 200 gallon booster tank and one 1950 Seagrave fire truck with a 750 Seagrave pump and 150 gallon booster tank with standard equipment. List of equipment on each truck upon request. Both trucks are still in service and can be seen until bids are accepted. Bids to be plainly marked "Bid on Fire Truck" and addressed to the Tuxedo-Cheverly Volunteer Fire Company, Inc., 5711 Tuxedo Road, Hyattsville P. O., Maryland, Tuxedo, Maryland. We reserve the right to reject any or all bids.

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1942 Seagrave, 750 G.P.M. Triple combination V-12 Cyl. 240 H.P. Motor 200 gal. Booster tank. Brass pump. Dual ignition Low Mileage Navy surplus. For quick sale $2500.00 F.O.B. Chicago.

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ADVERTISING

on this page

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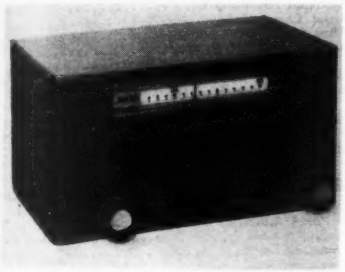
MANUFACTURERS' NEWS

Continued from page 226

built in. There are three 1½-inch discharges and a 2½-inch suction connection is located on each side of the trailer. There is also one 2½-inch intake from the tank fitted with a 2½-inch selector valve for use in proportioning wetting agents or foam. The unit is equipped with a Hale FZZ pump, 60 gpm at 90 psi.

Harron Mobile Receiver



Harron Labs., 42-10 220th Street, Bayside 61, N. Y., has announced a mobile radio receiver for 6 or 12-volt operation. Designed for fire calls on a specified frequency within the 30-50 or 152-162-mc. range, the narrow band receiver is said to be drift-free; contains eight tubes, 5-inch speaker, squelch control, and is housed in a steel cabinet.

Appointments and Promotions

J. Frank Adams has been appointed parts and service manager for the International truck sales department, according to an announcement by L. W. Pierson, manager of sales of International Harvester's motor truck division.

Herb Le Blanc has been appointed district engineer for Marlow Pumps, Div. of Bell & Gossett Co., Midland Park, N. J.

John E. Blakes has been appointed sales representative for the "Automatic" Sprinkler Corporation of America, Youngstown, Ohio, for western Iowa and eastern Nebraska. He will make his headquarters at 235 - 42nd Street, Des Moines, Iowa.

Frank F. Jaeger has joined Walter Kidde & Company, Inc., and will work in the company's Chicago district office as a specialist in the engineering of carbon dioxide fire extinguishing systems.

Six new distributors for Eureka Fire Hose have been announced by Robert P. McCulloch, sales manager, Eureka Fire Hose Division, United States Rubber Co., Passaic, N. J.

Arthur P. Wolever, 225 Hampton Road, Syracuse 6, N. Y., has been named agent for central New York State.

Karl Schaapman, formerly located on Long Island, is moving to western New York State. His new office location has not been determined as yet.

Charles H. Paddock will operate under the name of Central New York Distributors, 127 South Fourth Avenue, Ilion, N. Y., as northeastern New York State representative.

Joseph Gallagher, 92-07 Bergenwood Avenue, North Bergen, N. J., will handle Hudson County, N. J., sales. **Richard M. Parkhurst,** 510 Madison Avenue, Dunellen, N. J., will serve several northern New Jersey counties.

John E. Constantine, 203 Fern Street, Bangor, Maine, will handle sales in northern Maine.

Robert J. Brewer has been appointed assistant commercial sales manager of Scott Aviation Corporation, Lancaster, N. Y., it was announced by L. F. Jordan, general sales manager. Brewer has been with Scott since 1955 as a sales representative, later as sales promotion manager, commercial division.

At their year-end meeting, directors of American District Telegraph Company elected **Laurence J. O.Brien** secretary and counsel of the company.

Edward F. Gaston, ADT president, also announced that Mr. O'Brien will continue as general sales manager.

Edward L. Falls, Jr. has been promoted executive assistant to the general manager of Motorola's Communications Division, with headquarters in Chicago. As a vice president of Motorola Communications & Electronics, he has been managing sales and service in the southern states.

Robert N. Swift, formerly vice president and manager of Motorola's midwest sales area will replace Falls, with offices in Dallas, Tex.

Robert F. Davis succeeds Swift as vice president and manager in the midwest. His headquarters remain in Chicago.

Moves West Coast Office

Waukesha Motor Company's Los Angeles branch headquarters has been moved into its new building in Huntington Park, Calif. Effective immediately, the correct address for all correspondence to the Pacific Coast branch will be: Waukesha Motor Company, 5608 Soto Street, Huntington Park, Calif. Waukesha will no longer have offices located at the former address in Los Angeles, nor at Watts, Calif. □□

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MODEL 504

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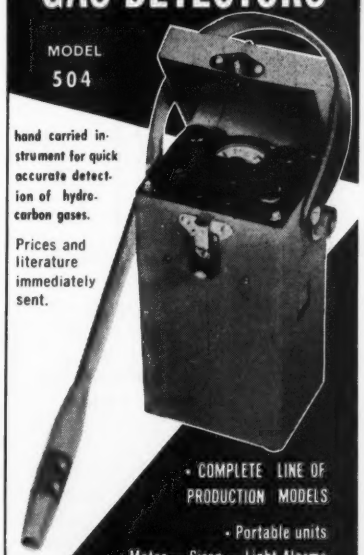

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Your copy will be mailed promptly upon receipt of your request addressed to: Sales Division, Department "D", Republic Rubber, Youngstown 1, Ohio.

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MARCH, 1960

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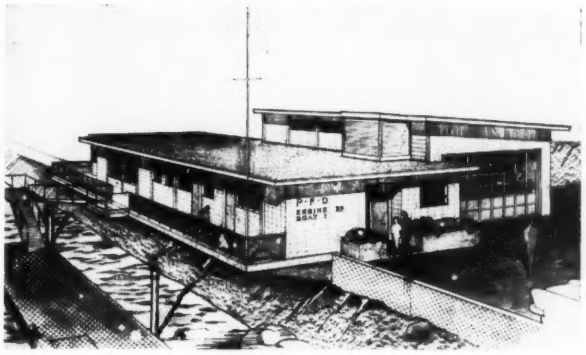
This design, as well as that of the City's "Basic Fire Station," to be erected in residential areas was conceived by the architect, Holman J. Barnes, A.I.A., of Portland after lengthy study and consultations with officials of the Bureau of Fire.

Like all of Portland's 12 newest stations, its hose is "serviced-by-Circul-Air" (3 more Dryers now on order). Indeed, over 70% of America's new fire stations for each of the past 10 years are Circul-Air equipped. And more and more departments, because of the high cost and expendability of hose are going for the "Full Treatment" . . . Hose Washers, Dryers and modern Storage Racks.



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- No Radiant Heat — Can't Injure Hose
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- Reduces Station Construction Cost

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- Racks 1800 ft. 2½" Hose
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- Detachable Turn-table to Re-load Truck
- Stores in a 9 ft. Space
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NEW IMPERIAL® AXIAL PLAYPIPE

Imperial tip delivers full gallonage at any setting.

Style 730 2½" Axial Playpipe with Imperial Tip

Spring steel handles deeply embedded in rubber.

Swiveling base, controls always on top. No kink in hose.

See New Akron Brass Catalog 60—Page 26

Compact. Perfectly balanced, shut-off in the center, not on top. 15⅜" long.

Full swiveling base keeps hose straight. Controls are always on top where they're easy to see and handle.

Spring steel handles, deeply embedded in rubber, anchored securely to playpipe body. Cannot pull off. Added safety. Comfortable grip.

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